ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. #0008489
CSSTP-0008-00(489)
Chatham County
SR 26 @ I-95 Southbound Ramp

OFFICE Design Policy & Support

DATE 7/26/2010

FROM for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT **APPROVED CONCEPT REPORT WITH NOTICE OF LOCATION & DESIGN**

Attached is the approved Concept Report with Notice of Location and Design for the above subject project.

Attachment

DISTRIBUTION:

Glenn Durrence, District Engineer
Genetha Rice-Singleton, Program Control Adminstrator
Glenn Bowman, State Environmental Administrator
Kathy Zahul, State Traffic Engineer
Ron Wishon, State Project Review Engineer
Jeff Baker, State Utilities Engineer
Karon Ivery, District Utilities Engineer
Angela Robinson, Financial Management Administrator
Angela Alexander, State Transportation Planning Administrator
Teresa Scott, District Planning & Programming Engineer
Bradford Saxon, District Preconstruction Engineer
Dennis Odom, Project Manager
Ken Thompson, Statewide Location Bureau Chief
Michael Henry, Systems & Classification Branch Chief
Troy Pittman, Area Engineer (District 5 Area 5)

BOARD MEMBER - 12th Congressional District

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

PROJECT CONCEPT REPORT

Project Number: CSSTP-0008-00(489)
County: Chatham
P. I. Number: 0008489
Federal Route Number: US 80 @ I-95 SB Ramp
State Route Number: SR 26 @ SR 405

Project Description

The intersection of SR 26 and the I-95 southbound ramp will be signalized and interconnected with the I-95 northbound ramp, Parsons Avenue, and Bourne Avenue adjacent traffic signals to improve operational level-of-service and reduce accidents. It is recommended that the I-95 southbound ramp include dual left turns onto SR 26. A timing contract will be included in this proposed project.

Submitted for approval:

DATE 06-07-10 Office Head (Project Manager's Office)

DATE 6-4-10 Project Manager

Recommendation for approval:

DATE _____ State Design Policy Engineer

DATE _____ Program Control Administrator

DATE 6/24/10 Glenn Bowman * State Environmental Administrator

DATE 7/7/10 Kathy Zahul * State Traffic ~~Operations~~ Engineer

DATE _____ Project Review Engineer

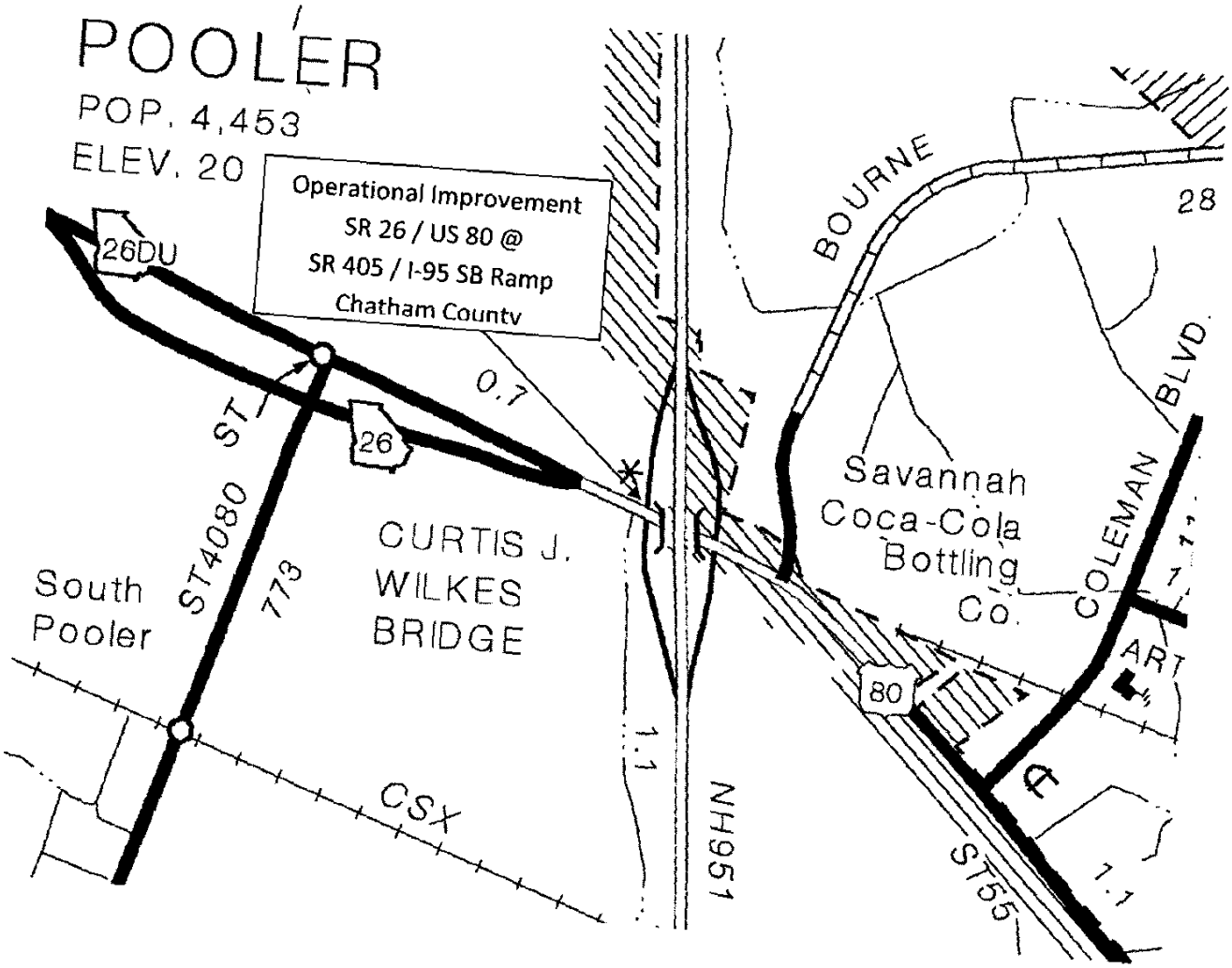
DATE 6/7/10 District Engineer

DATE _____ State Transportation Financial Management Administrator

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

DATE 6-24-10 State Transportation Planning Administrator

* Recommendation on file. KKF


POOLER
POP. 4,453
ELEV. 20
Operational Improvement
SR 26 / US 80 @
SR 405 / I-95 SB Ramp
Chatham County
26DU
26
0.7
ST
ST4080
773
South
Pooler
CURTIS J.
WILKES
BRIDGE
CSX
1.1
NH951
BOURNE
28
Savannah
Coca-Cola
Bottling
Co.
COLEMAN
BLVD.
80
ST55
1.1

Need and Purpose: The need for this project is to improve the operational LOS as well as help eliminate conflicts with through and turning movements at the SR 26 and I-95 southbound intersection. There is also a need to reduce injury crashes at this intersection which were above the statewide average in 2007 and in 2008. The purpose of this project is to improve the operational LOS for the projected traffic volumes and also to reduce the incidence of injury crashes.

Description of the proposed project: The intersection of SR 26 and the I-95 southbound ramp will be signalized and interconnected with the I-95 northbound off ramp, Parsons Avenue, and Bourne Avenue adjacent traffic signals to improve operational level-of-service and reduce crash potential. It is recommended that the I-95 southbound ramp traffic design include dual left turns onto SR 26. A timing contract will be included in this proposed project. The intersection of SR 26 and the I-95 southbound ramp is located in Chatham County. SR 26 provides east-west connectivity and runs parallel to I-16 from Dublin, Statesboro, Savannah and Tybee Island and is functionally classified as an urban minor arterial street at this intersection and west to the county line. East of this intersection SR 26 is classified as an urban principal arterial, with the I-95 southbound ramp being the first intersection where SR 26 is classified as an urban minor arterial street. I-95 provides north-south connectivity from Florida, Savannah and South Carolina and is functionally classified as an urban interstate principal arterial.

Land Use

The current land use in proximity to the SR 26 and southbound I-95 ramps is commercial, consisting of restaurants and hotels. However, there are no developments in directly adjacent quadrants of this intersection.

Existing and Projected Traffic Volumes

Existing Level of Service (LOS) is 'B' on SR 26 to the west and east of the I-95 Southbound ramp and also along I-95. LOS is 'D' in the future year 2035 for each of these corridors. Existing capacity on these facilities is able to accommodate the current and future volumes traversing this intersection based on level of service (See Table 1 for details of corridor LOS). However, the I-95 southbound exit ramp approach to SR 26 is LOS 'F' in the existing and future year conditions.

Table 1: Adjacent Corridor LOS

Corridor:	2007 AADT	2012 AADT	2032 AADT	2007 LOS	2012 LOS	2032 LOS
SR 26 (west of I-95)	25,800	29,900	42,700	B	C	D
SR 26 (east of I-95)	26,400	30,600	43,700	B	C	D
I-95 southbound exit ramp / approach to SR 26	7,900	9,150	13,100	F	F	F
I-95 southbound	68,200	79,000	113,000	B	C	D

In the analysis of the SR 26 and I-95 southbound ramp intersection, the level of service (LOS) is 'F' in the AM peak period and 'F' in the PM peak period in the existing (2007), build year (2012) and design year (2032)[1]. This indicates a deficiency in that the volume at this intersection is greater than the capacity.

Crash Data:

An analysis of crashes within the project limits was performed (see Table 2 for more details). In comparison to the statewide average for similar facility types, the injury rate was higher for SR 26 than the statewide average in 2007 and in 2008. The crash and fatality rates were lower for SR 26 than the statewide average for all three years (2006, 2007 and 2008). Of the crash types, approximately 71% of all crashes are rear end collisions, 14% are angle collisions and 14% are sideswipes from the same direction. Further investigation of the primary collision type (rear end crashes), revealed the following: The primary conditions for rear end collisions at this intersection occurred when one vehicle was heading eastbound onto SR 26 from the I-95 southbound exit ramp and was stopped at the stop sign or behind a queue of other vehicles stopped at the stop sign. The second vehicle failed to stop and collided with the first. A second type of incident occurred for vehicles travelling east or westbound on SR 26 where the first vehicle slowed down in proximity to this intersection and a second vehicle collided with the first by following too closely.

Table 2: Crashes / Crash Rates for SR 26 at the I-95 Southbound Ramp During the Years 2006, 2007 and 2008

Year	2006		2007		2008	
Comparison	SR 26	Statewide	SR 26	Statewide	SR 26	Statewide
Crashes	2		1		4	
Crash Rate	238	531	110	514	440	471
Injuries	1		2		4	
Injury Rate	119	201	220	190	440	176
Fatalities	0		0		0	
Fatality Rate	0.00	1.51	0.00	1.47	0.00	1.46

Project Linkage:

Currently, there is one project programmed in proximity to the intersection of SR 26 at the I-95 southbound ramp. Project ID No. 511165 (I-95 from N/I-16 in Chatham thru Effingham to S.C. state line – 8 lanes) will widen I-95 to an eight lane roadway.

1 Design year traffic and turning movements are based on 2032 Daily Hourly Volumes (DHV) produced by GDOT OEL in October 2007.

Is the project located in a PM 2.5 Non-attainment area? _____**Yes** ____X__**No**

Is this project located in an Ozone Non-attainment area? _____**Yes** ____X__**No**

PDP Classification: Major_____ Minor ___X____

Federal Oversight: Full Oversight ( ) Exempt (X) State Funded ( ) or Other ( )

Functional Classification: **SR 26: Urban Principal Arterial east of I-95**
SR 26: Urban Minor Arterial Street west of I-95
I-95: Urban Interstate Principal Arterial

U. S. Route Number(s): US 80 @ I-95 SB Ramp **State Route Number(s):** SR 26 @ SR 405 SB Ramp

Traffic (AADT):

SR 26 Base Year: (2007)	26,400	Design Year: (2032)	43,700
I-95@SB Ramp Base Year: (2007)	7,900	Design Year: (2032)	13,100
I-95 Base Year: (2007)	68,000	Design Year: (2032)	113,000

Existing Design Features:

- **Typical Section:** SR 26 is 4-lane divided roadway with 12' lanes with a dedicated left turn lane on the Westbound approach and a right turn slip lane on the Eastbound approach separated by a concrete island; sidewalk and crosswalk on the north side only.
- **Posted Speed:** SR 26 is 45 mph and I-95 SB Ramp is 35 mph
- **Minimum Radius for Curve:** ____N/A_____
- **Maximum Super-elevation Rate for Curve:** _____N/A_____
- **Maximum Grade:** __2____%
- **Width of Right-of-Way:** SR 26 100 feet and I-95 300 feet
- **Major Structures:** None
- **Major interchanges or intersections along the project:** SR 26/US 80 @ SR 405/I-95 SB Ramp & NB Ramp
- **Existing length of roadway segment and the beginning mile logs for each county segment:** SR 26 is approximately 0.4 miles with the beginning M.P. @ 5.79
  I-95 SB Ramp is approximately 0.2 miles with the beginning M.P. @ 21.74
- If an expansion or add-on to an existing ITS system (such as NaviGAtor), identify physical limits of field device location and/or brief explanation of new features. N/A

Proposed Design Features:

- **Proposed Typical Section(s):** Same as General Existing Typical Section
- **Proposed Design Speed Mainline:** SR 26 45 mph
- **Proposed Maximum Grade Mainline:** 2 %
- **Maximum Grade Allowable:** 3.5 %
- **Proposed Maximum Grade Side Street:** 2 %
- **Maximum Grade Allowable:** 3.5 %

- **Proposed Maximum Grade Driveway:** 10.5 %
- **Proposed Maximum Degree of Curve:** 3° 00'
- **Maximum Degree Allowable:** 6° @ 55 mph
- **Maximum Super-elevation Rate:** N/A

- **Right-of-Way:**
  - Width N/A
  - Easements: Temporary ( ) Permanent ( ) Utility ( ) Other ( ).
  - Type of access control: Full (X) Partial ( ) By Permit ( ) Other ( ).
  - Number of parcels: 0 Number of displacements: 0
    - Business: 0
    - Residences: 0
    - Mobile homes: 0
    - Other: 0
- **Structures:**
  - Bridges: N/A
  - Retaining walls: N/A
- **Major intersections, interchanges, median openings and signal locations:** SR 26/US 80 @ SR 405/I95 SB Ramp. Signal Warrant is attached for proposed signal location.
- For ITS projects identify physical limits of field device location, location of any control centers and/or brief explanation of new features. N/A
- **Transportation Management Plan Anticipated:** Yes ( ) No (X) Maintain Traffic On Existing Roadway for Signal Installation
- **Design Exceptions to controlling criteria anticipated:**

	YES	NO	UNDETERMINED
HORIZONTAL ALIGNMENT:	( )	(X)	( )
LANE WIDTH:	( )	(X)	( )
SHOULDER WIDTH:	( )	(X)	( )
VERTICAL GRADES:	( )	(X)	( )
CROSS SLOPES:	( )	(X)	( )
STOPPING SIGHT DISTANCE:	( )	(X)	( )
SUPERELEVATION RATES:	( )	(X)	( )
VERTICAL ALIGNMENT:	( )	(X)	( )
SPEED DESIGN:	( )	(X)	( )
VERTICAL CLEARANCE:	( )	(X)	( )
BRIDGE WIDTH:	( )	(X)	( )
BRIDGE STRUCTURAL CAPACITY:	( )	(X)	( )
LATERAL OFFSET TO OBSTRUCTION:	( )	(X)	( )

- **Design Variances:** N/A
- **Environmental Concerns:** N/A
- **Anticipated Level of Environmental Analysis:**
  - Are Time Savings Procedures appropriate? Yes (X) No ( )
  - Categorical exclusion anticipated (X).
- **Utility Involvements:** Power, Phone, Gas
- **VE Study Anticipated** Yes ( ) No (X)

- **Benefit/Cost Ratio**: Traffic Operations has determined that this is a Priority 2 Operational Improvement project based on level of service analysis.

Project Cost Estimate and Funding Responsibilities:

	PE	ROW	UTILITY	CST	MITIGATION
By Whom	In-House	N/A	Companies	GDOT	N/A
$ Amount	$62,000	N/A	$8,000	*$180,693	N/A

*The Southbound off ramp will be restriped to accommodate dual left turns. The existing pavement width is adequate to accommodate dual left turns, therefore, no additional cost is included for widening.

Project Activities Responsibilities:

- Design: GDOT
- Right-of-Way Acquisition: N/A
- Right-of-Way funding (real property): N/A
- Relocation of Utilities: Utility Companies
- Letting to contract: GDOT
- Supervision of construction: GDOT
- Providing material pits: Contractor (If Required)
- Providing detours: Contractor (If Required)
- Environmental Studies/Documents/Permits: GDOT
- Environmental Mitigation: GDOT

Coordination

- Concept meeting date and brief summary: May 25, 2010
- P A R meetings, dates and results: N/A
- FEMA, USCG, and/or TVA: N/A
- Public involvement: N/A
- Local government comments: N/A
- Other projects in the area: N/A
- Railroads: N/A
- Other coordination to date: June 17, 2010 Atlanta GDOT Aviation Programs Office and FAA

Scheduling – Responsible Parties' Estimate

- Time to complete the environmental process: 5 Months
- Time to complete preliminary construction plans: 5 Months
- Time to complete right-of-way plans: N/A Months
- Time to complete the Section 404 Permit: N/A Months
- Time to complete final construction plans: 3 Months
- Time to complete to purchase right-of-way: N/A Months
- List other major items that will affect the project schedule: N/A Months

Other alternates considered: The only other alternative considered was the No Build which did not enhance safety or provide operational improvements.

Comments: See approved 2006 Traffic Signal Warrant Analysis – TE Study & Preliminary Signal Design.

Attachments:

1. General Typical Section
2. 2007 Traffic Diagrams with Design Year Traffic Volumes
3. 2006 Traffic Signal Warrant Study
4. Proposed Conceptual Design – Not For Construction
5. Updated 2010 - Detailed List of Material, Pay Items for Traffic Signal Installation with Quantities
6. Updated 2010 - Cost Estimates (CES, Fuel/Asphalt Price Adjustment, Utility)
7. Location and Design Notice. (On Minor Projects)
8. Minutes of May 25, 2010 Concept Meeting & Atlanta GDOT Programs Office and FAA Coordination
9. QC/QA Documentation

Exempt projects

Concur: _____
Director of Engineering

Approve: _____ Date: 7/23/2010
Chief Engineer

CONCEPT
SCORING RESULTS AS PER POLICIES AND PROCEDURES 2440-2

Project Number: CSSTP-0008-00(489)	**County:** Chatham	**PI No.:** 0008489

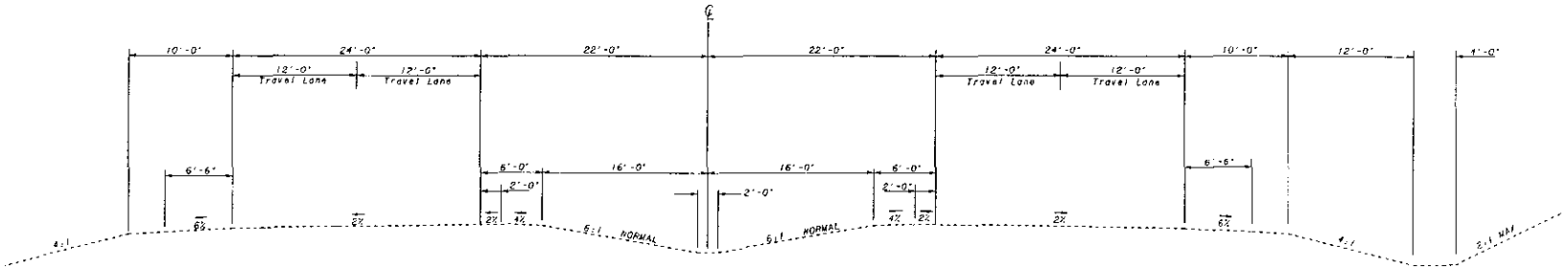
Report Date:	**Concept By: Tshaka Malik Al-Kush**
	DOT Office: Jesup, District 5
☒ CONCEPT	
	Consultant: N/A (GDOT, In-House)

Project Type: Choose One From Each Column	☐ Major X Minor	☒ Urban ☐ Rural	☐ ITS ☐ Bridge ☐ Building ☐ Interchange X Intersection ☐ Interstate ☐ New Location ☐ Widening & Reconstruction ☐ Miscellaneous

FOCUS AREAS	**SCORE**	**RESULTS**
Presentation		
Judgment		
Environmental		
Right-of-Way		
Utility		
Constructability		
Schedule		

1. General Typical Section

PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
CSSTP-0008-00(489)		



SR 26/US 80 - General Existing Typical Section
4 Lanes With a 44' Median

REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION
	OFFICE:
	TYPICAL SECTIONS
	Project: CSSTP-0008-00(489) County: Chatham
	DRAWING NO. 5-

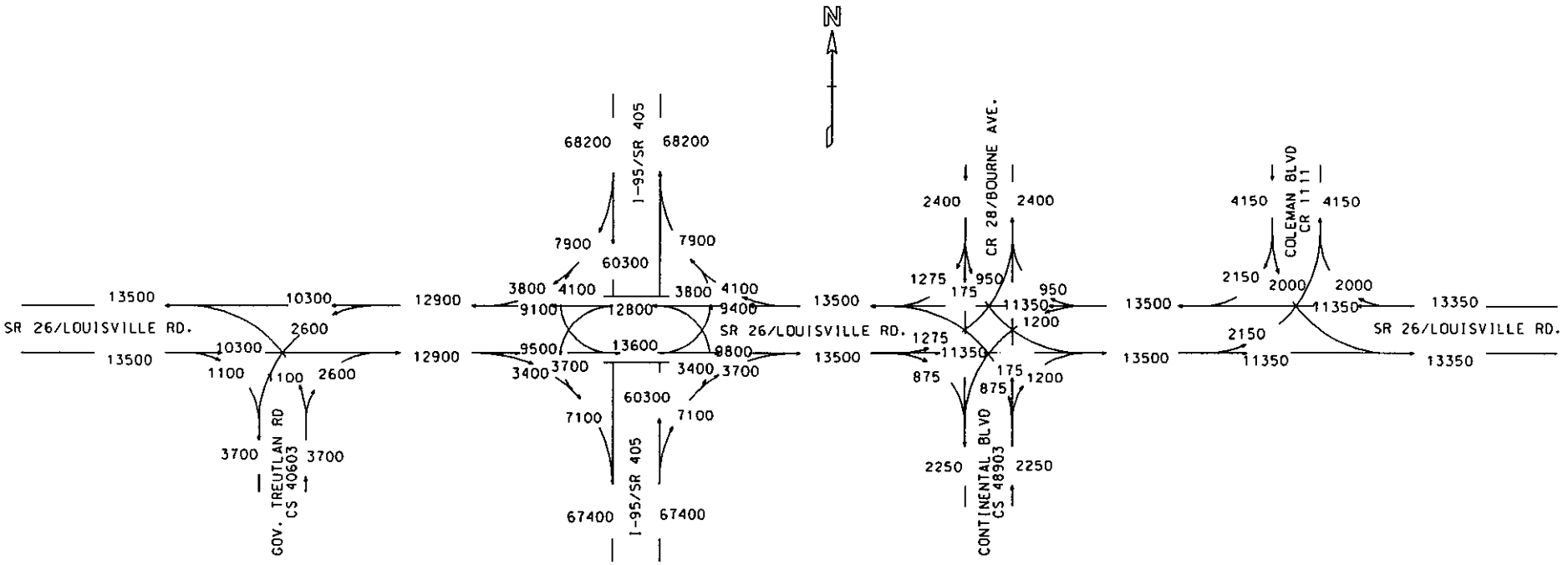
2. 2007 Traffic Diagrams with Design Year Traffic Volumes

SHEET 1 OF 1

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

EXISTING 2007

CHATHAM COUNTY



STP-0008-00(489)
P.I. NO. 0008489
CHATHAM COUNTY

SR 26 @
I-95 SB RAMP

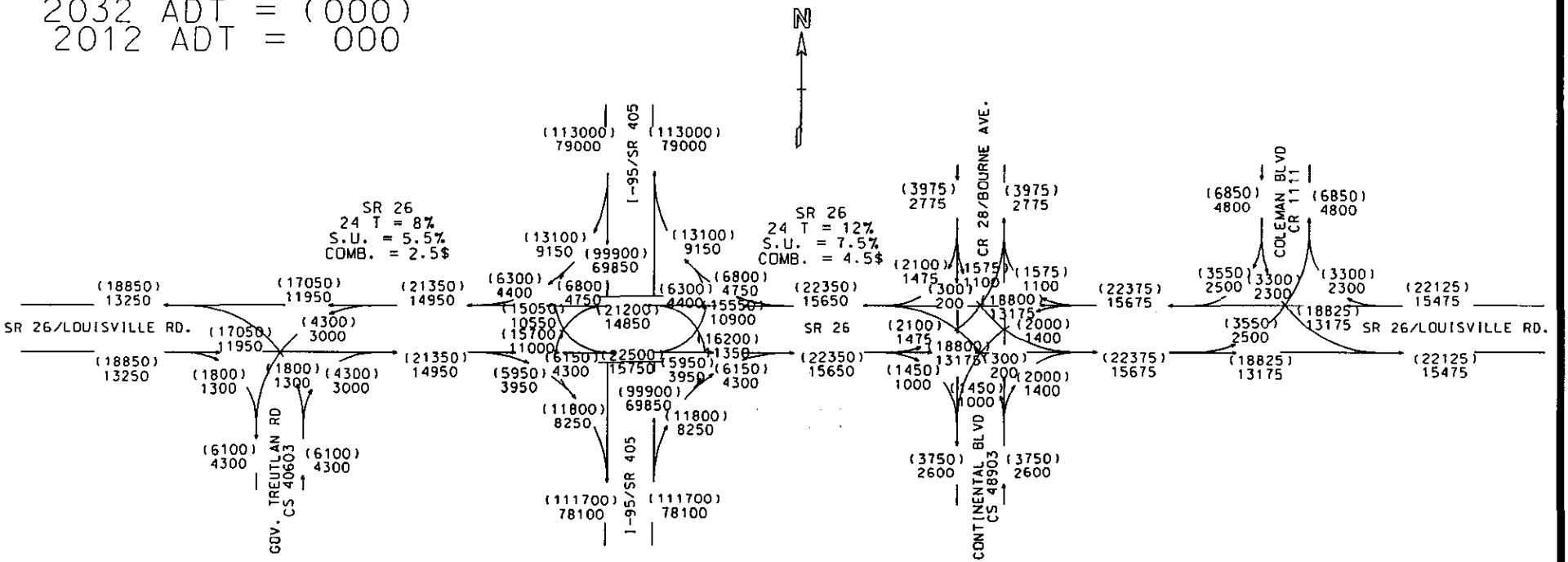
RFN
10/07

SHEET 1 OF 2

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF ENVIRONMENT/LOCATION

CHATHAM COUNTY

2032 ADT = (000)
2012 ADT = 000



STP-0008-00(489)
P.I. NO. 0008489
CHATHAM COUNTY

SR 26 @
I-95 SB RAMP

RFN
10/07

3. 2006 Traffic Signal Warrant Study

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE: **S.R. 26 AT S.R. 405 SB OFF RAMP**
Chatham County

OFFICE: Jesup, Georgia

DATE: October 17, 2006

FROM: Glenn W. Durrence, P.E., District Engineer

TO: Mr. Keith Golden, State Traffic Safety & Design Engineer
Attn.: Ms. Kathy Bailey

SUBJECT: **Lump Sum Operational Improvement Project**

This letter is to request a Lump Sum Operational Improvement Project for the Signalization of the above-referenced location. If approved please revise the signal permit numbers for the following intersections to reflect system number 38.

- SR26/US80 AT SR405/I-95 NB OFF RAMP
- SR26/US80 AT PARSONS AVE.
- SR26/US80 AT BOURNE AVE.

Please find attached a traffic engineering study and a preliminary signal design for the referenced intersection.

If you have any questions or need additional information, please contact Neil Dubberly of this office at (912) 427-5704.

Attachment

RTM:REH:END

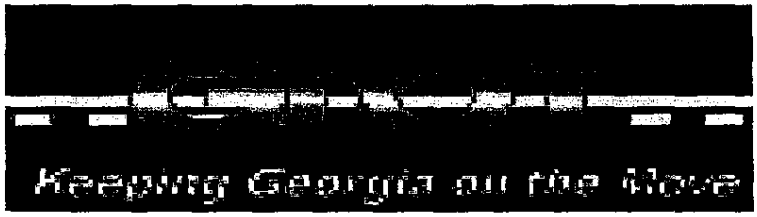
Date: 10-18-06 _____
District Traffic Engineer

Date: 11/13/06 _____
District Engineer

Distribution- w/attachment

Copy: Mr. Brian Summers, State Project Review Engineer
Mr. Joseph Palladi, P.E., State Transportation Planning Admin.
Mr. Harvey Keepler, State Environmental/Location Engineer
Ms. Anita Withers, G.O. - Traffic Safety & Design
Mr. Rick Hardenbrook, District Traffic Operations Manager
Mr. Donnie Williams, Area Engineer, Savannah
Mr. Tony Collins, District Preconstruction Engineer
General Files – Atlanta
District Files - Jesup

TRAFFIC SIGNAL WARRANT ANALYSIS
TE STUDY
SR26 AT SR405 SB OFF RAMP
CHATHAM COUNTY



DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
October 16, 2006
M.P. 5.79

Prepared by

District 5
Traffic Operations

Traffic Control Device Permit Package

County Chatham City Pooler District 5

Intersection S.R. 26 AT S.R. 405 SB OFF RAMP

☒ Stop and Go Signal ☐ Flashing Beacons ☐ School Beacon ☐ _____ Other

	District 5	Traffic Safety and Design
Traffic Engineering Study	☒	☐
Conceptual Signal Design Diagram	☒	☐
Application	☒	☐
Sample Permit with	☒	☐
Location Map	☒	☐
Adjacent Signal Location Maps	☒	☐
Collision Diagram	☒	☐
Pedestrian Accommodations	☒	☐
Support for excluding	☐ n/a	☐
Turning Movement Counts	☒	☐
P/P or Protected Only Documentation	☒	☐
Recommendation for Installation	☒	☐

Comments: _____

_____

District Package Reviewer : RCK TS & D Package Reviewer: _____

Date Sent: 11-9-06 Date Received : _____ Date Screened: _____

5 Business Day Goal Met

Package Complete ☐ ☐ Yes ☐ No

Incomplete Package or Additional Information Request

		Requested	Returned
First Request	☐ e-mail ☐ Phone ☐ In person	_____ Date	_____ Date
Second Request	☐ e-mail ☐ Phone ☐ In person	_____ Date	_____ Date

Package Submittal

Recommendation of State Traffic Safety and Design Engineer _____ Date

15 Business Day Goal Met ☐ Yes ☐ No

Recommended Director of Operations _____ Date

Approved/ Denied Chief Engineer _____

TRAFFIC SIGNAL WARRANT ANALYSIS – TE STUDY
SR26 AT SR405 SB OFF RAMP
CHATHAM COUNTY

STUDY LOCATION

The intersection of State Route (SR) 405 South Bound off ramp and SR26 in Chatham County has been examined for Signalization needs. This intersection is located along SR26 approximately 350' west of the centerline of SR405. For the purposes of this report, SR405SB off ramp has a North/South orientation and SR26 has an East/West orientation. (See attached site map and adjacent signalized intersection map).

REASON FOR INVESTIGATION

The intersection of SR405 SB off ramp and SR26 was observed having moderate delays and stacking in the median. The Department has investigated this location to determine if Signalization or other operational improvements can be implemented.

TOPOGRAPHY

At the study location, SR26 is a four-lane divided roadway. The Westbound approach on SR26 has a dedicated left turn lane and two through lanes. The Eastbound approach on SR26 has two through lanes with a right turn slip, separated by a concrete island. All through lanes are 12-feet in width.

SR405 SB Off Ramp is a one lane ramp with a right turn slip separated by a concrete island.

Intersection sight distance was measured using a driver's eye height of 42" and a vehicle height of 42" per ASHTO guidelines. Sight distance measurements are shown below.

SR405 SB Off Ramp approach looking East onto SR26	**1000ft.**
SR405 SB Off Ramp approach looking West onto SR26	**1000ft.**

TRAFFIC SIGNAL WARRANT ANALYSIS – TE STUDY
SR26 AT SR405 SB OFF RAMP
CHATHAM COUNTY

EXISTING TRAFFIC CONTROL

SR26 carries free flow traffic at its intersection with SR405 SB Off Ramp and on ramp. Stop signs, stop bars and edge lines control SR405 SB Off Ramp.

VEHICLE VOLUME HISTORY

Table 1- AADT for SR405 AT SR26		
YEAR	SR405 (TC#0385)	SR26 (TC#0264)
2005	67,100	18,040
2004	66,000	24,640

Left Turning movements are included on a separate sheet listed in this study.

P/P OR PROTECTED ONLY PHASING DOCUMENTATION

This product analysis yields the following for the Westbound left turn:

AM Peak hour-110 left turns X 874 opposing through/right-turn vehicles=96,140/2=48,070

Midday Peak Hour-169 left turns X 783 opposing through/right-turn vehicles=132,327/2=66,164

PM Peak Hour-251 left turns X 672 opposing through/right-turn vehicles=168,672/2=84,336

(See attached turning movement data)

TRAFFIC SIGNAL WARRANT ANALYSIS – TE STUDY
SR26 AT SR405 SB OFF RAMP
CHATHAM COUNTY

VEHICLUAR SPEEDS

The posted speed limit for both approaches of SR26 at its intersection with SR405 SB Off Ramp is 45 MPH. The posted speed limit for SR405 SB Off Ramp at Its intersection with SR26 is 35MPH.

PEDESTRIAN MOVEMENTS

During the peak hour traffic counts, no pedestrians were recorded crossing any approach of the intersection. Sidewalks and crosswalks are present on the North side of the intersection only.

PARKING

On-street parking is not permitted along SR26 or SR405 SB Off Ramp in the vicinity of the intersection.

COLLISION HISTORY

Collision data was available for the study intersection between the time period of March 2004 to March 2006. A total of 15 collisions were reported. 2 were correctable by the installation of a traffic signal. Below see the accidents per year.

CRASHES	2006	2004-2005
RIGHT ANGLE	1	1
LEFT TURN		
REAR END		8
HEAD ON		
SIDESWIPE		5
OTHER		

(See attached collision diagram)

TRAFFIC SIGNAL WARRANT ANALYSIS – TE STUDY
SR26 AT SR405 SB OFF RAMP
CHATHAM COUNTY

MUTCD SIGNAL WARRANT ANALYSIS

A traffic signal warrant analysis was performed for the intersection of SR26 and SR405 SB Off Ramp using the criteria provided in the Manual on Uniform Traffic Control Devices MUTCD, 2003 Edition. The data for the study was imported into the PC WARRANTS program for analysis and justification.
(See attached PC Warrants Analysis)

CONCLUSIONS

An examination of traffic volumes and collision experience indicates that warrants 1, 2 and 3 of the MUTCD signal warrants are satisfied at this intersection.

Of the 15 collisions reported between March 2004 and March 2006 (2) are considered correctable by a traffic signal.

At this intersection volumes for left turn phasing were met for the Westbound approach at SR405 off ramp.

TRAFFIC SIGNAL WARRANT ANALYSIS – TE STUDY
SR26 AT SR405 SB OFF RAMP
CHATHAM COUNTY

RECOMMENDATIONS

Based on an analysis of traffic data, collision experience, intersection operations, and potential signalization needs, the following action is recommended.

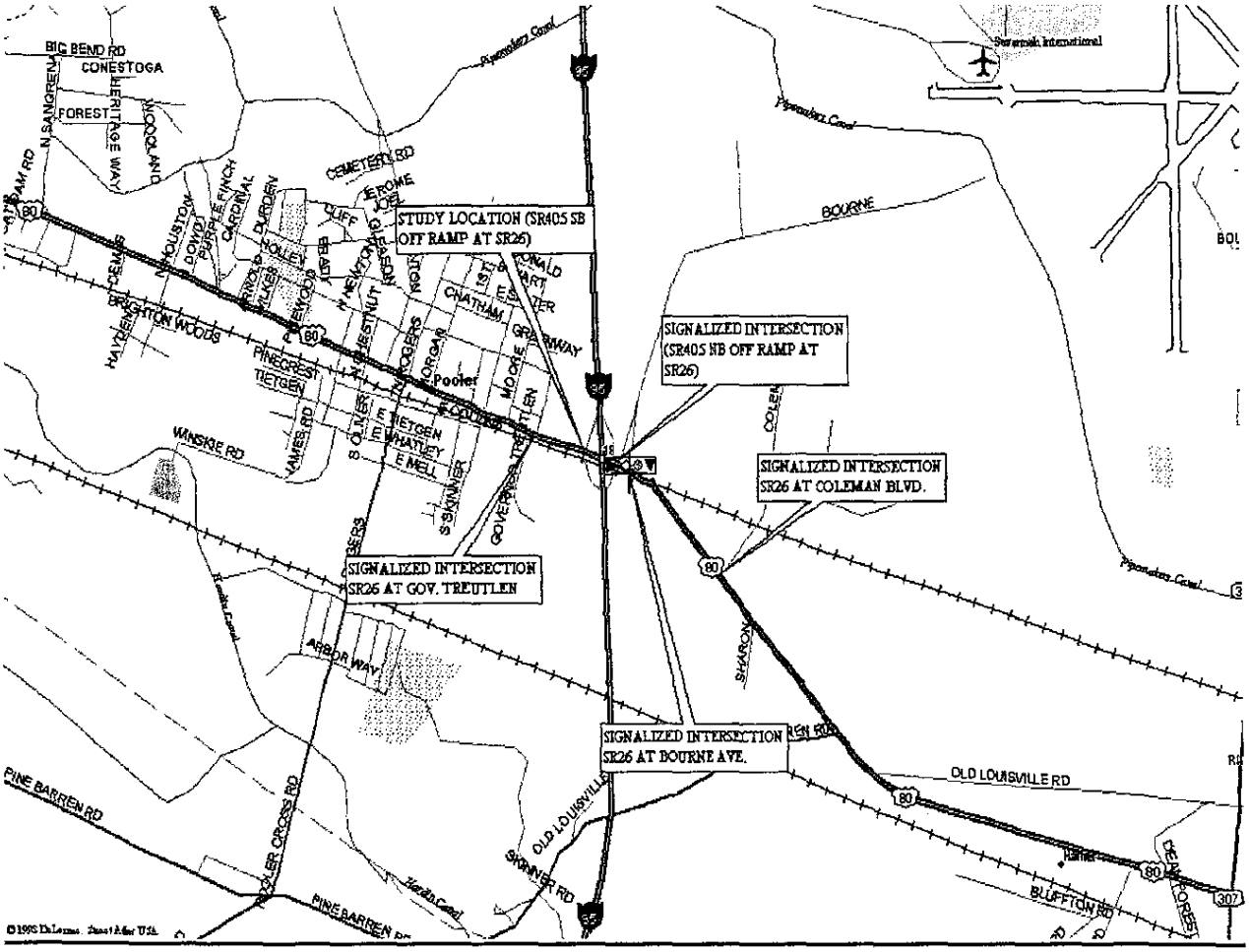
- **It is recommended that City of Pooler be issued a permit to erect and operate a stop and go traffic signal at this intersection.**
- **It is recommended that this work be accomplished through a lump sum operational improvement project.**
- **It is recommended that this signal be interconnected with these existing signalized locations.**
    1. **SR26/US80 AT SR405/I-95 NB Off Ramp**
    2. **SR26/US80 AT Parsons Ave.**
    3. **SR26/US80 AT Bourne Ave.**
- **It is recommended that a timing contract be included in this proposed project.**

RECOMMENDED BY: _____ *DATE:* 10-18-06
District Traffic Engineer

RECOMMENDED BY: _____ *DATE:* _____
State Traffic Safety and Design Engineer

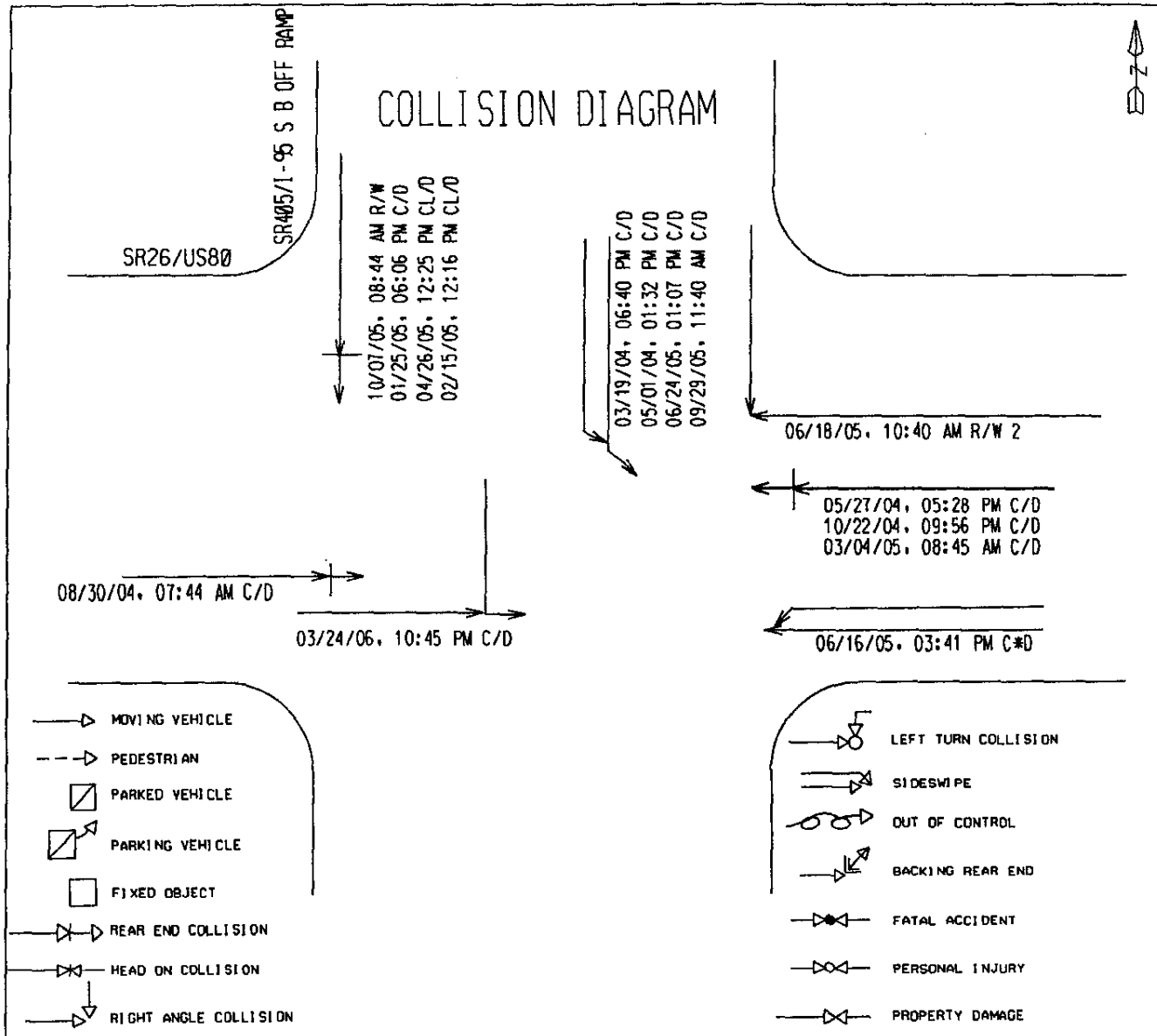
RECOMMENDED BY: _____ *DATE:* _____
Director of Operations

SR 405 SB OFF RAMP AT SR26



SIGNALIZED INTERSECTION/SITE MAP

COLLISION DIAGRAM



TIME OF DAY	NO. ACC.
6 AM - 10 AM	3
10 AM - 4 PM	7
4 PM - 7 PM	3
7 PM - 12 MID	2
12 MID - 6 AM	0
TOTAL	15

DIR. OF APPROACH	NO. VEH.
NORTH	0
SOUTH	18
EAST	3
WEST	9
TOTAL	30

WEATHER	NO. ACC'S.
CLEAR	11
CLOUDY	2
RAIN	2
FOG	0
SNOW	0
TOTAL	15

TYPE ACCIDENT	NO. ACC'S.
SIDESWIPE	4
REAR END	9
RT. ANGLE	2
LEFT TURN	0
OTHER	0
TOTAL	15

PAVEMENT	NO. ACC'S.
DRY	13
WET	2
ICY	0
TOTAL	15

ACCIDENT SEVERITY	NO. ACC'S.
FATAL	0
NON FATAL	4
PROP. DAM.	0
TOTAL	4

TIME OF YEAR	NO. ACC'S.
WINTER DEC-FEB	1
SPRING MAR-MAY	7
SUMMER JUNE-AUG	4
FALL SEPT-NOV	3
TOTAL	15

TYPE OF VEHICLE	NO. VEH.
PASS. CARS	
P/U TRUCKS	
OTHER	
TOTAL	

INTERSECTION SR26/US80 AT SR405/I-95 S B OFF RAMP

COUNTY CHATHAM CITY POOLER DIST 5

PERIOD 24 MONTHS FROM 03/04 TO 03/06

...\crashdgn.dgn 4/28/2006 3:03:37 PM

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 8490	Begin: 06/07/2006 07:00 AM	End: 06/07/2006 05:00 PM
Street: SR405	Lane: SB OFF RAMP LT	Hours: 10:00
State: GA	Oper: END	Period: 60
City: POOLER	Posted: 25	Raw Count: 1938
County: CHATHAM	AADT Factor: 1	AADT Count: 4651

NC97 Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
06/07/2006				
[07:00 AM-08:00 AM]	29	20 mph	82 F	Dry
[08:00 AM-09:00 AM]	261	19 mph	93 F	Dry
[09:00 AM-10:00 AM]	214	21 mph	105 F	Dry
[10:00 AM-11:00 AM]	208	18 mph	119 F	Dry
[11:00 AM-12:00 PM]	228	20 mph	117 F	Dry
[12:00 PM-01:00 PM]	170	19 mph	128 F	Dry
[01:00 PM-02:00 PM]	238	20 mph	132 F	Dry
[02:00 PM-03:00 PM]	200	18 mph	136 F	Dry
[03:00 PM-04:00 PM]	203	19 mph	132 F	Dry
[04:00 PM-05:00 PM]	187	21 mph	119 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 8493	Begin: 06/07/2006 07:00 AM	End: 06/07/2006 05:00 PM
Street: SR405	Lane: SB OFF RAMP RT	Hours: 10:00
State: GA	Oper: END	Period: 60
City: POOLER	Posted: 25	Raw Count: 1487
County: CHATHAM	AADT Factor: 1	AADT Count: 3569

NC97 Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
06/07/2006				
[07:00 AM-08:00 AM]	16	27 mph	80 F	Dry
[08:00 AM-09:00 AM]	127	25 mph	95 F	Dry
[09:00 AM-10:00 AM]	88	25 mph	107 F	Dry
[10:00 AM-11:00 AM]	94	25 mph	123 F	Dry
[11:00 AM-12:00 PM]	207	23 mph	132 F	Dry
[12:00 PM-01:00 PM]	278	23 mph	140 F	Dry
[01:00 PM-02:00 PM]	151	25 mph	146 F	Dry
[02:00 PM-03:00 PM]	147	24 mph	146 F	Dry
[03:00 PM-04:00 PM]	167	24 mph	119 F	Dry
[04:00 PM-05:00 PM]	212	23 mph	117 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 8348	Begin: 06/07/2006 07:00 AM	End: 06/07/2006 05:00 PM
Street: SR26	Lane: WB INSIDE	Hours: 10:00
State: GA	Oper: END	Period: 60
City: POOLER	Posted: 45	Raw Count: 3279
County: CHATHAM	AADT Factor: 1	AADT Count: 7870

NC97 Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
06/07/2006				
[07:00 AM-08:00 AM]	17	36 mph	80 F	Dry
[08:00 AM-09:00 AM]	217	36 mph	89 F	Dry
[09:00 AM-10:00 AM]	231	35 mph	101 F	Dry
[10:00 AM-11:00 AM]	251	35 mph	115 F	Dry
[11:00 AM-12:00 PM]	376	35 mph	123 F	Dry
[12:00 PM-01:00 PM]	397	33 mph	130 F	Dry
[01:00 PM-02:00 PM]	356	35 mph	136 F	Dry
[02:00 PM-03:00 PM]	394	37 mph	136 F	Dry
[03:00 PM-04:00 PM]	465	36 mph	134 F	Dry
[04:00 PM-05:00 PM]	575	35 mph	128 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 8474	Begin: 06/07/2006 07:00 AM	End: 06/07/2006 05:00 PM
Street: SR26	Lane: WB OUTSIDE LANE	Hours: 10:00
State: GA	Oper: END	Period: 60
City: POOLER	Posted: 45	Raw Count: 2767
County: CHATHAM	AADT Factor: 1	AADT Count: 6641

NC97 Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
06/07/2006				
[07:00 AM-08:00 AM]	14	37 mph	80 F	Dry
[08:00 AM-09:00 AM]	182	38 mph	89 F	Dry
[09:00 AM-10:00 AM]	203	37 mph	101 F	Dry
[10:00 AM-11:00 AM]	236	36 mph	113 F	Dry
[11:00 AM-12:00 PM]	344	35 mph	121 F	Dry
[12:00 PM-01:00 PM]	362	34 mph	128 F	Dry
[01:00 PM-02:00 PM]	304	38 mph	132 F	Dry
[02:00 PM-03:00 PM]	336	38 mph	134 F	Dry
[03:00 PM-04:00 PM]	352	38 mph	134 F	Dry
[04:00 PM-05:00 PM]	434	37 mph	128 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 8342	Begin: 06/07/2006 07:00 AM	End: 06/07/2006 05:00 PM
Street: SR26	Lane: WB LEFT TURN	Hours: 10:00
State: GA	Oper: END	Period: 60
City: POOLER	Posted: 45	Raw Count: 1448
County: CHATHAM	AADT Factor: 1	AADT Count: 3475

NC97 Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
06/07/2006				
[07:00 AM-08:00 AM]	92	16 mph	80 F	Dry
[08:00 AM-09:00 AM]	110	18 mph	91 F	Dry
[09:00 AM-10:00 AM]	114	18 mph	101 F	Dry
[10:00 AM-11:00 AM]	135	18 mph	115 F	Dry
[11:00 AM-12:00 PM]	117	19 mph	123 F	Dry
[12:00 PM-01:00 PM]	143	18 mph	125 F	Dry
[01:00 PM-02:00 PM]	169	17 mph	132 F	Dry
[02:00 PM-03:00 PM]	146	18 mph	136 F	Dry
[03:00 PM-04:00 PM]	171	20 mph	134 F	Dry
[04:00 PM-05:00 PM]	251	18 mph	128 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 8491	Begin: 06/07/2006 07:00 AM	End: 06/07/2006 05:00 PM
Street: SR26	Lane: EB RIGHT TURN	Hours: 10:00
State: GA	Oper: END	Period: 60
City: POOLER	Posted: 25	Raw Count: 1072
County: CHATHAM	AADT Factor: 1	AADT Count: 2573

NC97 Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
06/07/2006				
[07:00 AM-08:00 AM]	15	27 mph	80 F	Dry
[08:00 AM-09:00 AM]	148	26 mph	91 F	Dry
[09:00 AM-10:00 AM]	126	27 mph	103 F	Dry
[10:00 AM-11:00 AM]	107	26 mph	119 F	Dry
[11:00 AM-12:00 PM]	110	28 mph	126 F	Dry
[12:00 PM-01:00 PM]	117	26 mph	136 F	Dry
[01:00 PM-02:00 PM]	117	27 mph	140 F	Dry
[02:00 PM-03:00 PM]	118	27 mph	142 F	Dry
[03:00 PM-04:00 PM]	96	26 mph	142 F	Dry
[04:00 PM-05:00 PM]	118	25 mph	136 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 8494	Begin: 06/07/2006 07:00 AM	End: 06/07/2006 05:00 PM
Street: SR26	Lane: EB INSIDE LANE	Hours: 10:00
State: GA	Oper: END	Period: 60
City: POOLER	Posted: 45	Raw Count: 2941
County: CHATHAM	AADT Factor: 1	AADT Count: 7058

NC97 Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
06/07/2006				
[07:00 AM-08:00 AM]	64	38 mph	78 F	Dry
[08:00 AM-09:00 AM]	380	40 mph	89 F	Dry
[09:00 AM-10:00 AM]	236	39 mph	99 F	Dry
[10:00 AM-11:00 AM]	244	40 mph	111 F	Dry
[11:00 AM-12:00 PM]	352	40 mph	121 F	Dry
[12:00 PM-01:00 PM]	497	37 mph	125 F	Dry
[01:00 PM-02:00 PM]	340	39 mph	132 F	Dry
[02:00 PM-03:00 PM]	267	40 mph	134 F	Dry
[03:00 PM-04:00 PM]	268	40 mph	132 F	Dry
[04:00 PM-05:00 PM]	293	40 mph	128 F	Dry

Date/Time/Volume/Average Speed/Temperature Report

HI-Star ID: 8425	Begin: 06/07/2006 07:00 AM	End: 06/07/2006 05:00 PM
Street: SR26	Lane: EB OUTSIDE LANE	Hours: 10:00
State: GA	Oper: END	Period: 60
City: POOLER	Posted: 45	Raw Count: 2879
County: CHATHAM	AADT Factor: 1	AADT Count: 6910

NC97 Date & Time Range	Count	Avg Speed	Temp	Wet/Dry
06/07/2006				
[07:00 AM-08:00 AM]	51	38 mph	80 F	Dry
[08:00 AM-09:00 AM]	346	38 mph	89 F	Dry
[09:00 AM-10:00 AM]	283	36 mph	97 F	Dry
[10:00 AM-11:00 AM]	252	39 mph	111 F	Dry
[11:00 AM-12:00 PM]	354	37 mph	121 F	Dry
[12:00 PM-01:00 PM]	452	37 mph	125 F	Dry
[01:00 PM-02:00 PM]	326	37 mph	130 F	Dry
[02:00 PM-03:00 PM]	294	38 mph	132 F	Dry
[03:00 PM-04:00 PM]	260	38 mph	134 F	Dry
[04:00 PM-05:00 PM]	261	39 mph	130 F	Dry

GEORGIA DEPARTMENT OF TRANSPORTATION

DISTRICT 5

TRAFFIC OPERATIONS

Study Name : **SR405 SB @ SR26**
Study Date : **06/09/06**
Page No. : **1**

Signal Warrants - Summary

Major Street Approaches

Eastbound: **SR26**
Number of Lanes: **2**
Approach Speed: **45**
Total Approach Volume: **6,763**

Westbound: **SR26**
Number of Lanes: **2**
Approach Speed: **45**
Total Approach Volume: **7,371**

Minor Street Approaches

Northbound: **SR405 SB ON RAMP**
Number of Lanes: **1**
Total Approach Volume: **0**

Southbound: **SR405 SB OFF RAMP**
Number of Lanes: **1**
Total Approach Volume: **3,424**

Warrant Summary **(Rural values apply.)**

Warrant 1 - Eight Hour Vehicular Volumes ..... **Satisfied**

Warrant 1A - Minimum Vehicular Volume ..... **Satisfied**
Required volumes reached for 9 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic ..... **Satisfied**
Required volumes reached for 9 hours, 8 are needed

Warrant 1 A&B - Combination of Warrants ..... **Satisfied**
Required volumes reached for 9 hours, 8 are needed

Warrant 2 - Four Hour Volumes ..... **Satisfied**
Number of hours (9) volumes exceed minimum >= minimum required (4).

Warrant 3 - Peak Hour ..... **Satisfied**

Warrant 3A - Peak Hour Delay ..... **Not Satisfied**
Total approach volumes and delays on minor street do not exceed minimums for any hour.

Warrant 3B - Peak Hour Volumes ..... **Satisfied**
Volumes exceed minimums for at least one hour.

Warrant 4 - Pedestrian Volumes ..... **Not Satisfied**
Required 4 Hr pedestrian volume reached for 0 hour(s) and the single hour volume for 0 hour(s)

Warrant 5 - School Crossing ..... **Not Satisfied**
Number of gaps > .0 seconds (0) exceeds the number of minutes in the crossing period (0).

Warrant 6 - Coordinated Signal System ..... **Not Satisfied**
Nearest coordinated signal (800) is less than 1,000 feet away.

Warrant 7 - Crash Experience ..... **Not Satisfied**
Number of accidents (-1) is less than minimum (5). Volume minimums are met.

Warrant 8 - Roadway Network ..... Not Evaluated

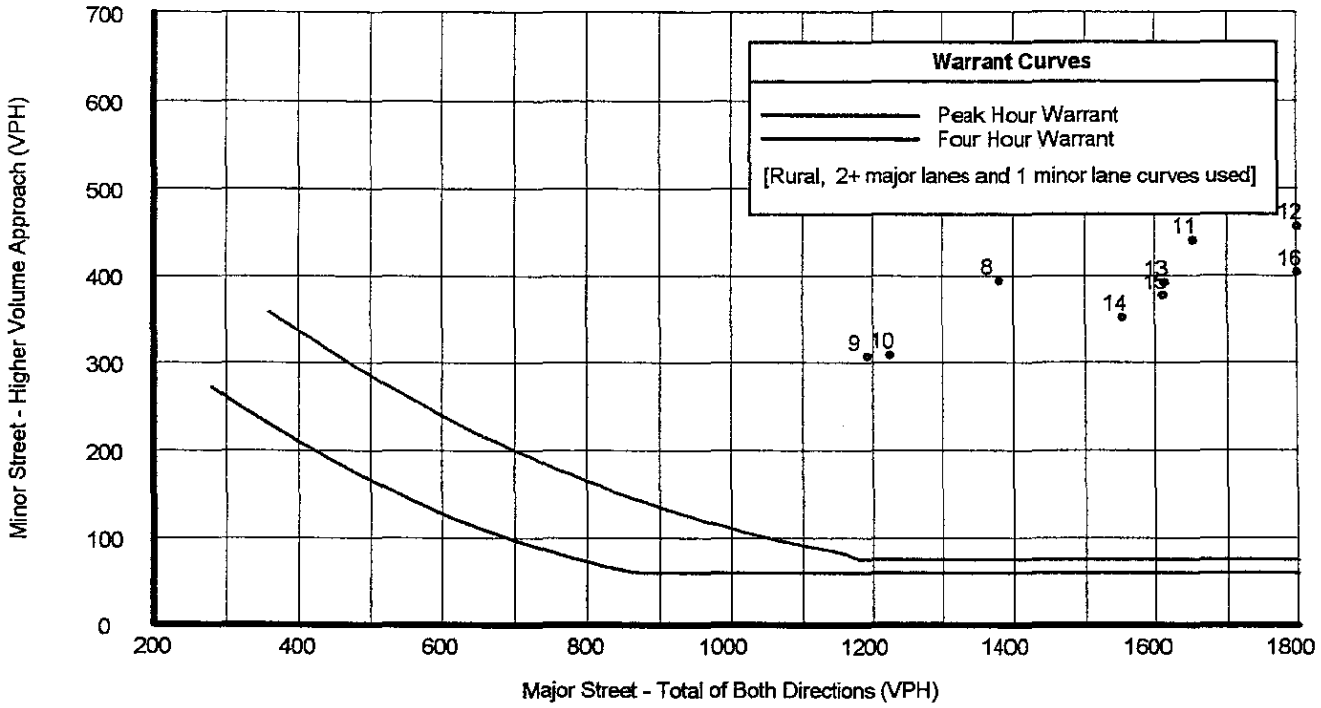
GEORGIA DEPARTMENT OF TRANSPORTATION

DISTRICT 5

TRAFFIC OPERATIONS

Study Name : **SR405 SB @ SR26**
Study Date : **06/09/06**
Page No. : **2**

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour	Major	Higher Minor		War-1A			War-1B			War-1A&B		
Begin	Total	Vol	Dir	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
01:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
02:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
03:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
04:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
05:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
06:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
07:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
08:00	1,383	393	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
09:00	1,193	306	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
10:00	1,225	308	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
11:00	1,653	440	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
12:00	1,968	456	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
13:00	1,613	391	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
14:00	1,555	351	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
15:00	1,612	376	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
16:00	1,932	403	SB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
17:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
18:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
19:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
20:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
21:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
22:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—
23:00	0	0	NB	420-No	105-No	—	630-No	53-No	—	504-No	84-No	—

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
TRAFFIC SIGNAL AUTHORIZATION

SAMPLE PERMIT

The State Department of Transportation of Georgia hereby approves, subject to the conditions set forth herein, the use of a Traffic Signal device as described below and as shown on the attached drawing.

LOCATION OF SIGNAL

County: Chatham City: Pooler Mile Point: 5 . 79
Local Highway or Street Names: Old Louisville Hwy at Tom Coleman Hwy
State Route and U.S. Route Numbers: S.R. 26 at I-95 SB Ramp
DOT Intersection Number: 3802745

TYPE SIGNAL

☒ Stop and Go ☐ Flashing Beacon ☐ School Beacon ☐ Other _____

☒ Full Actuated ☒ Pedestrian Push Buttons ☒ Pedestrian Heads ☐ RR Pre-emption

☐ Other Pre-emption ☒ Interconnected Local (Master/Local) ☐ Closed Loop/TBC

Controller shall meet Ga. D.O.T. Specifications. Controller Phasing and signal heads shall conform to the details on the attached drawing.

The signal device as described in this document is to be maintained and operated by:

☒ The Georgia Department of Transportation
☐ _____

Special Requirements: _____

Signal shall flash during all times when it is not in Stop and Go operation and during emergency repairs. Signal heads are to be hooded or taken down when for any reason the signal is not operating as Stop and Go or Flasher during a period of more than six consecutive days or when requested by DOT Traffic Operations Engineer. The traffic control signal equipment, its installation, operation and timing covered by this authorization shall not be materially altered without the written approval of the Georgia Department of Transportation.

NOTE: This authorization is valid only so long as equipment used is standard equipment as specified and is maintained and operated in accordance with the terms of this authorization and the requirements of the current Manual on Uniform Traffic Control Devices.

REVISION APPROVED: _____
State Traffic Operations Engineer

DOT-401
Rev. 9/93

Distribution:
White - Applicant
Yellow - State Traffic Engineer
Pink - District Traffic Engineer

Do Not Write In This Space
Application No. ________
Permit No. ________

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

REQUEST FOR TRAFFIC SIGNAL

To the Georgia Department of Transportation:

The CITY of POOLER in CHATHAM County hereby requests approval for the use of a traffic signal at the location described below:

LOCATION

Local Street Names: LOUISVILLE HWY. at -----------

State Route Numbers: S.R. 26/US 80 at S.R. 405/I-95 S.B. RAMP

TYPE SIGNAL

(X) Stop and Go ( ) Flashing Beacon ( ) School Beacon ( ) Other

CONDITIONS OF APPLICATION AND STANDARDS OF OPERATION

In the event that the Georgia Department of Transportation authorizes the use of a traffic signal at the above location, the undersigned agrees to participate in the costs to purchase and install the signal. This level of participation will be determined after a study of the location has been completed. The signal must be installed to the Department's standards and conform with the authorization issued by the Department and the provisions set forth therein.

COST OF OPERATION

The full and entire costs of the electric energy and telephone service used to operate the signal shall be at the expense of the applicant without any cost to the Georgia Department of Transportation. The applicant understands that the Department may ask for participation in the costs for the purchase, installation and maintenance of the signal if approved.

INSPECTION AND APPROVAL

The installation, maintenance and operation of said signal shall be subject at all times to inspection and approval by a duly authorized engineer of the Georgia Department of Transportation.

RIGHT TO REVOKE

The Georgia Department of Transportation reserves the right to revoke the approval should it for any reason desire to do so, by giving the applicant thirty (30) days written notice, and in that event, the applicant agrees to remove said signal from said right-of-way at its own expense or allow it to be removed by the Department.

This application is hereby submitted and all of the terms and conditions are hereby agreed to. The undersigned are duly authorized to execute this instrument.

~~This~~ the 24 day of APRIL 2006

Attest:
[signature]
Clerk

By: [signature]

Title: CITY MANAGER

ENGLISH (FOR INFORMATION PURPOSES ONLY)

TRAFFIC SIGNAL INSTALLATION NO. 8

FILE:

LOCATION:Chatham County, City of Pooler, SR 26 at I-95 SB Ramp

DATE: 10-26-2006

LIST OF MATERIALS

PROJECT NUMBER:

QUANTITY	LIST OF MATERIALS	UNIT	QUANTITY	COST	TOTAL
	CONTROLLER CABINET ASSEMBLIES				
1	A. CONTROLLER UNIT, MODEL 2070L	EA	1	2500	2500
1	D. CABINET ASSEMBLY, MODEL 332	EA	1	5250	5250
6	E. SWITCH PACK	EA	6	30	180
2	F. DC ISOLATOR	EA	2	33.5	67
4	G. LOOP DETECTOR, 2 CHANNEL	EA	4	200	800
1	J. 2010 CONFLICT MONITOR, EXTENDED FEATURES	EA	1	700	700
1	K. BATTERY BACKUP SYSTEM, INTERNAL	EA	1	3000	3000
1	PC642-200 (OR EQUIVALENT), SURGE PROTECTOR	EA	1	33.15	33.15
	LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED/1000 FT)				
2	A. 3 PAIR, 18 AWG	REEL	2	300	600
	SIGNAL CABLE (14 AWG)				
2	B. 7 CONDUCTOR, PER 1000 FT.	REEL	2	402	804
2	LOOP DETECTOR WIRE (14 AWG, STRANDED/1000 FT)	REEL	2	100	200
10	ONE-WAY, 3-SECTION, 12" EXPANDED VIEW LED SIGNAL HEAD, PLASTIC	EA	10	474	4740
6	ONE-WAY, 1-SECTION, 16" PEDESTRIAN LED SIGNAL HEAD, FULL, SIDE BY SIDE	EA	6	443	2658
5	PEDESTRIAN PUSH BUTTON AND SIGN	EA	5	24	120
10	BACK PLATE FOR ONE-WAY, 3-SECTION, 12" SIGNAL HEAD	EA	10	28.45	284.5
10	HARDWARE FOR SPANWIRE ERECTION	EA	10	25	250
	HARDWARE FOR PEDESTAL ERECTION FOR 18" PEDESTRIAN				
2	SIGNAL HEADS, ONE-WAY MOUNTING	EA	2	26	52
	HARDWARE FOR PEDESTAL ERECTION FOR 18" PEDESTRIAN				
1	SIGNAL HEADS, TWO-WAY MOUNTING	EA	1	75	75
4	PEDESTAL POLE 10 FT	EA	4	180	720
11	PULL BOX, PB-1	EA	11	100	1100
3	PULL BOX, PB-3	EA	3	225	675
325	LOOP SAW CUT	LF	325	3.5	1137.5
50	CONDUIT, 1"	LF	50	4.12	206
800	CONDUIT, 2"	LF	800	6.04	4832
250	CONDUIT, RIGID, 2"	LF	250	3	750
1	R580-5 W/ POST	EA	1	95	95
4	PED PUSH BUTTON POST/PEDESTAL INCL FOOTING	EA	4	50	200
	MISC MATL TO COMPLETE INSTALLATION	LUMP	LUMP	2000	2000
	MATERIALS SUB-TOTAL (647-1000)				34029
	LABOR				
80	SUPERVISOR (1)	HRS	80	30	2400
80	ELECTRICIANS (1)	HRS	80	26	2080
240	LABORERS (3)	HRS	240	22.21	5331
	LABOR SUB-TOTAL (647-1000)				9811
	EQUIPMENT				
16	TRENCHER	HRS	16	22	352
80	PICK-UP TRUCK	HRS	80	15	1200
40	CRANE, LT. HYDRO	HRS	40	60	2400
80	TRUCK, BUCKET	HRS	80	30	2400
80	TRUCK, LINE	HRS	80	30	2400
	EQUIPMENT SUB-TOTAL (647-1000)				6752
	TOTAL 647-1000 (AT COST)				52592
	MOBILIZATION (10%)				5259
	TRAVEL EXPENSE (10%)				5259
	SUB-CONTRACTOR PROFIT (10%)				5259
	CONTRACTOR PROFIT (10%)				5259
LS	647-1000 TRAFFIC SIGNAL INSTALLATION NO. 8	LUMP	LUMP		73629

60	615-1200	DIRECTIONAL BORE	LF	60	7	420
8	639-4004	STRAIN POLE, TP IV	EA	8	3900	31200
4	647-2140	PULL BOX, PB-4	EA	4	1000	4000
2	647-2150	PULL BOX, PB-5	EA	2	1300	2600
		NETWORK SYSTEM ***				
0	935-1113	OUTSIDE PLANT FIBER OPTIC CABLE, LOOSE TUBE, SINGLE MODE, 24 FIBER	LF	2000	5	10000
0	935-1511	OUTSIDE PLANT FIBER OPTIC CABLE, DROP, SINGLE MODE, 6 FIBER	LF	500	2	1000
0	935-3103	FIBER OPTIC CLOSURE, UNDERGROUND, 24 FIBER	EA	1	800	800
0	935-3203	FIBER OPTIC CLOSURE, AERIAL (SEALED), 24 FIBER	EA	2	560	1120
0	935-3401	FIBER OPTIC CLOSURE, FDC (RACK MOUNTED), 6 FIBER	EA	0	270	0
0	935-3403	FIBER OPTIC CLOSURE, FDC (RACK MOUNTED), 24 FIBER	EA	0	1515	0
0	935-3501	FIBER OPTIC CLOSURE, FDC (WALL MOUNTED), 6 FIBER	EA	0	615	0
0	935-3503	FIBER OPTIC CLOSURE, FDC (WALL MOUNTED), 24 FIBER	EA	0	3000	0
0	935-4010	FIBER OPTIC SPLICE, FUSION	EA	36	42	1512
0	935-5050	FIBER OPTIC PATCH CORD, SM	EA	2	65	130
0	935-5060	FIBER OPTIC SNOWSHOE	EA	2	120	240
0	935-6562	EXTERNAL TRANSCEIVER, DROP AND REPEAT, 1310 SINGLE MODE, (SIGNAL JOBS)	EA	2	1450	2900
0	935-8000	TESTING	LUMP	LUMP	2710	2710
					TOTAL:	$ 132,261

Timing Cost Estimate

LIST OF TASKS

687-1000 TRAFFIC SIGNAL TIMING STUDY

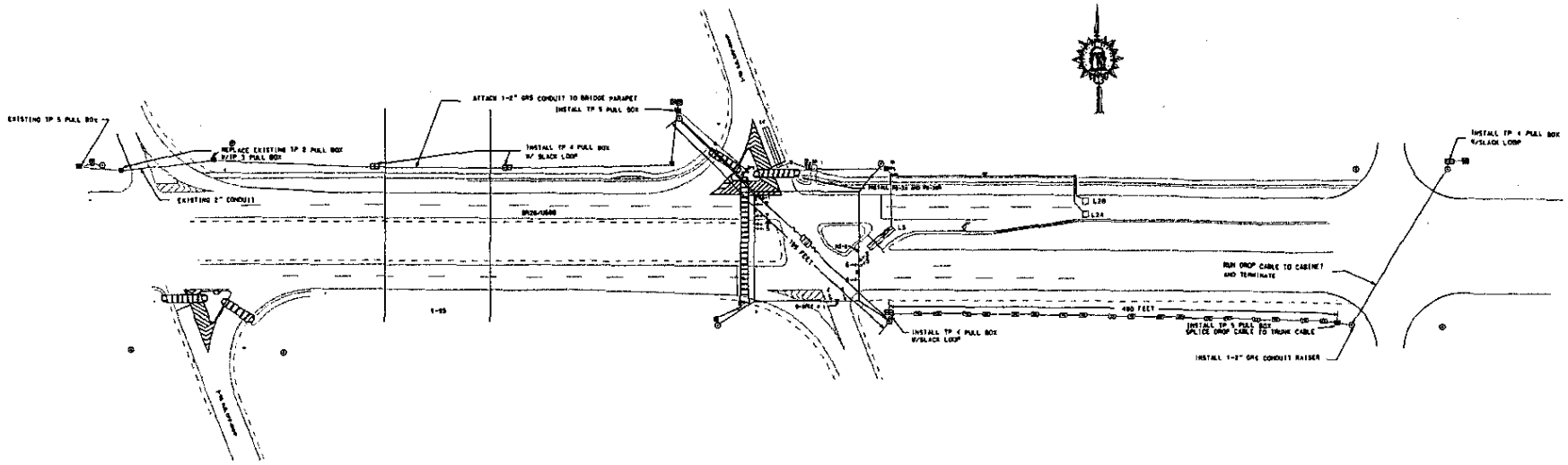
PROJECT: STP-00000 / COUNTY

LOCATION: 4 SIGNALS @ SR26/SR 405 I-95 Ramps

JOB TASK DESCRIPTION	COST
REVIEW PLANS	1200.00
ENGINEERING STUDY	1600.00
DATA COLLECTION	1200.00
INTERSECTION ANALYSIS	1600.00
ARTERIAL/NETWORK ANALYSIS	1200.00
TIMING DATA	1600.00
OPERATING DATA	1200.00
OPERATING PLANS	4000.00
FINE TUNING	1200.00
FINAL OPERATING PLANS	1200.00
FINE TUNING TIMING IN FIELD	1200.00
EFFECTIVENESS STUDY	1600.00
TOTAL	**$18,800.00**

PRINT DATE: 10/26/2006

STATE	PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
GA.			



SCALE IN FEET
0 50 100 200

GEORGIA
DEPARTMENT OF TRANSPORTATION

DATE	REVISIONS

TRAFFIC SIGNAL INSTALLATION

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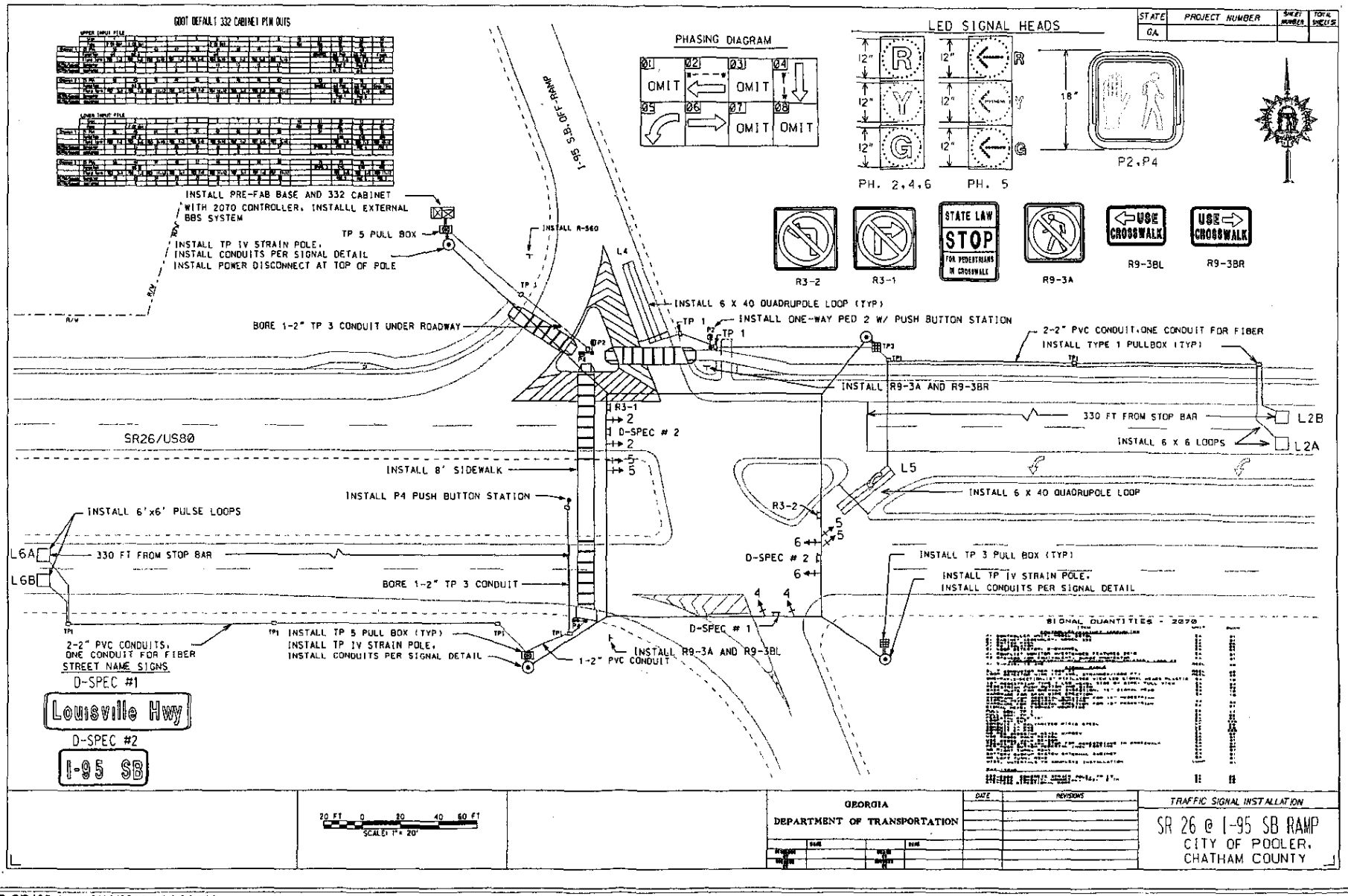

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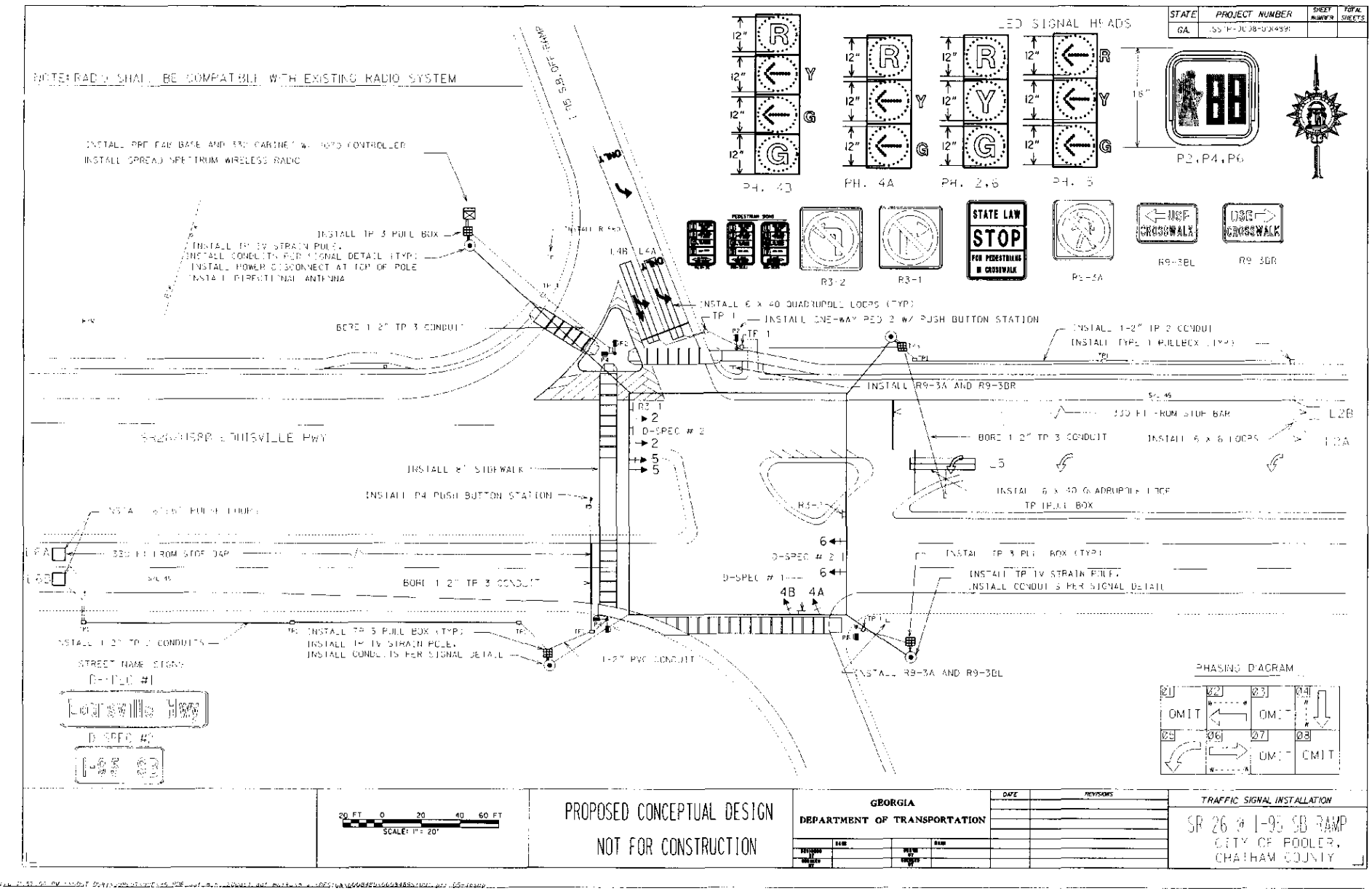
4. Proposed Conceptual Design – Not For Construction



STATE	PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
GA.	(STP-0008-00(499)		

5. Updated 2010 - Detailed List of Material, Pay Items for Traffic Signal Installation with Quantities

ENGLISH (FOR INFORMATION PURPOSES ONLY)

TRAFFIC SIGNAL INSTALLATION NO. 1

FILE:

LOCATION: SR26/US80 AT SR405/I-95 SOUTHBOUND RAMP

DATE: 04-14-2010

LIST OF MATERIALS

PROJECT NUMBER: CSSTP0008-00(489)

QUANTITY	LIST OF MATERIALS	UNIT	QUANTITY	COST	TOTAL
	CONTROLLER CABINET ASSEMBLIES				
1	A. CONTROLLER UNIT, MODEL 2070L	EA	1	3000	3000
0	B. CABINET ASSEMBLY, MODEL 337	EA	0	0	0
0	C. CABINET ASSEMBLY, MODEL 336S	EA	0	0	0
1	D. CABINET ASSEMBLY, MODEL 332	EA	1	6000	6000
7	E. SWITCH PACK	EA	7	30	210
3	F. DC ISOLATOR	EA	3	33.5	100.5
4	G. LOOP DETECTOR, 2 CHANNEL	EA	4	200	800
0	H. LOOP DETECTOR, 4 CHANNEL	EA	0	300	0
0	I. AC ISOLATOR	EA	0	43.75	0
1	J. 2010 CONFLICT MONITOR, EXTENDED FEATURES	EA	1	700	700
0	K. BATTERY BACKUP SYSTEM, EXTERNAL	EA	0	4500	0
0	HAYES SMART MODEM (OR EQUIVALENT), 33.6 KB/S	EA	0	300	0
0	TELEPHONE LINE DEDICATION AND MODEM HOOK-UP	EA	0	320	0
1	PC542-200 (OR EQUIVALENT), SURGE PROTECTOR	EA	1	33.15	33.15
	LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED/1000 FT)				
3	A. 3 PAIR, 18 AWG	REEL	3	400	1200
	SIGNAL CABLE (14 AWG)				
2	B. 7 CONDUCTOR, PER 1000 FT	REEL	2	620	1240
2	LOOP DETECTOR WIRE (14 AWG, STRANDED/1000 FT)	REEL	2	100	200
8	ONE-WAY, 3-SECTION, 12" EXPANDED VIEW LED SIGNAL HEAD, PLASTIC	EA	8	474	3792
0	ONE-WAY, 4-SECTION, 12" EXPANDED VIEW LED SIGNAL HEAD, PLASTIC	EA	0	532	0
0	ONE-WAY, 5-SECTION, 12" EXPANDED VIEW LED SIGNAL HEAD (CLUSTER), PLASTIC	EA	0	812	0
0	ONE-WAY, 3-SECTION, 12" OPTICAL PROGRAMMABLE SIGNAL HEAD	EA	0	300	0
	BLANK OUT SIGN, LED, 30" X 36"				
0	1.C ONE FACE ONE MESSAGE	EA	0	1634	0
0	2.C TWO FACE TWO MESSAGE	EA	0	2108	0
0	ONE-WAY, 1-SECTION, 18" PEDESTRIAN LED SIGNAL HEAD, FULL, SIDE BY SIDE	EA	0	443	0
	ONE-WAY, 1-SECTION, 18" LED COUNTDOWN PEDESTRIAN SIGNAL HEAD, FULL HAND/MAN OVERLAP				
6	1. 2 ROWS/9" HIGH	EA	6	600	3600
0	2. 2 ROWS/7" HIGH	EA	0	600	0
7	PEDESTRIAN PUSH BUTTON AND SIGN	EA	7	100	700
8	BACK PLATE FOR ONE-WAY, 3-SECTION, 12" SIGNAL HEAD	EA	8	75	600
0	BACK PLATE FOR ONE-WAY, 4-SECTION, 12" SIGNAL HEAD	EA	0	100	0
0	BACK PLATE FOR ONE-WAY, 5-SECTION, CLUSTERED 12" SIGNAL HEAD	EA	0	105	0
8	HARDWARE FOR SPANWIRE ERECTION	EA	8	40	320
0	HARDWARE FOR MAST ARM ERECTION	EA	0	30	0
	HARDWARE FOR PEDESTAL ERECTION FOR 18" PEDESTRIAN				
2	SIGNAL HEADS, ONE-WAY MOUNTING	EA	2	26	52
	HARDWARE FOR PEDESTAL ERECTION FOR 18" PEDESTRIAN				
2	SIGNAL HEADS, TWO-WAY MOUNTING	EA	2	75	150
4	PEDESTAL POLE 10 FT	EA	4	180	720
15	PULL BOX, PB-1	EA	15	100	1500
0	PULL BOX, PB-2	EA	0	150	0
4	PULL BOX, PB-3	EA	4	225	900
550	LOOP SAW CUT	LF	550	3.5	1925
100	CONDUIT, 1"	LF	100	4.12	412
800	CONDUIT, 2"	LF	800	3	2400
10	CONDUIT, RIGID, 2"	LF	10	6.04	60.4
1	R560-5 W/ POST	EA	1	95	95
1	R3-1, NO RIGHT TURN	EA	1	100	100
1	R3-2, NO LEFT TURN	EA	1	100	100
0	CLASS II TIMBER POLE W/GUYS (45 FT)	EA	0	265	0
1	PED PUSH BUTTON POST/PEDESTAL INCL FOOTING	EA	1	140	140
	MISC MATL TO COMPLETE INSTALLATION	LUMP	LUMP	2000	2000
	MATERIALS SUB-TOTAL (647-1000)				33050
	LABOR				
120	SUPERVISOR (1)	HRS	120	30	3600
120	ELECTRICIANS (1)	HRS	120	26	3120
360	LABORERS (3)	HRS	360	22.21	7997
	LABOR SUB-TOTAL (647-1000)				14717
	EQUIPMENT				
8	TRENCHER	HRS	8	22	176
120	PICK-UP TRUCK	HRS	120	15	1800
8	CRANE, LT. HYDRO	HRS	8	60	480
80	TRUCK, BUCKET	HRS	80	30	2400
80	TRUCK, LINE	HRS	80	30	2400
	EQUIPMENT SUB-TOTAL (647-1000)				7256
	TOTAL 647-1000 (AT COST)				55023
	MOBILIZATION (10%)				5502
	TRAVEL EXPENSE (10%)				5502
	SUB-CONTRACTOR PROFIT (10%)				5502
	CONTRACTOR PROFIT (10%)				5502
LS	647-1000 TRAFFIC SIGNAL INSTALLATION NO. 1	LUMP	LUMP		77032

0	441-0104	CONCRETE SIDEWALK, 4 IN.	SY	0	23	0
0	441-0740	CONCRETE MEDIAN, 4 IN	SY	0	24	0
0	441-6022	CONCRETE CURB & GUTTER, 6 IN X 30 IN, TP 2	LF	0	10.1	0
245	615-1200	DIRECTIONAL BORE	LF	245	15	3675
0	636-1020	HIGHWAY SIGNS, TP 1 MATL-REFL SHEETING, TP 3	SF	0	13.15	0
0	636-1029	HIGHWAY SIGNS, TP 2 MATL-REFL SHEETING, TP 3	SF	0	20	0
14	636-1032	HIGHWAY SIGNS, TP 2 MATL-REFL SHEETING, TP 6	SF	14	27.3	382.2
2	636-2020	GALV STEEL POSTS, TP 2	LF	2	4.6	9.2
0	639-2001	STEEL WIRE STRAND CABLE, 1/4 IN	LF	0	1.2	0
0	639-3004	STEEL STRAIN POLE, TP IV	EA	0	7620	0
0	639-3014	STEEL STRAIN POLE, TP IV, INCL LUMINAIRE ATTACHMENT POINT	EA	0	5000	0
4	639-5000	STRAIN POLE, TP IV	EA	4	4500	18000
0	647-2140	PULL BOX , PB-4	EA	0	1000	0
0	647-2150	PULL BOX, PB-5	EA	0	1300	0
0	653-0110	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	EA	0	51	0
0	653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	0	57	0
0	653-0130	THERMOPLASTIC PVMT MARKING, ARROW, TP 3	EA	0	70	0
0	653-1501	THERMOPLASTIC SOLID TRAFFIC STRIPE, 5 IN, WHITE	LF	0	0.25	0
0	653-1502	THERMOPLASTIC SOLID TRAFFIC STRIPE, 5 IN, YELLOW	LF	0	0.25	0
0	653-1704	THERMOPLASTIC SOLID TRAFFIC STRIPE, 24 IN, WHITE	LF	0	3.2	0
0	653-1804	THERMOPLASTIC SOLID TRAFFIC STRIPE, 8 IN, WHITE	LF	0	1.5	0
0	653-3501	THERMOPLASTIC DASHED TRAFFIC STRIPE, 5 IN, WHITE	GLF	0	0.15	0
0	647-5230	SIGNAL ASSEMBLY, FLASHING SCHOOL, COMPLETE	EA	0	3345.6	0
0	682-6110	CONDUIT, RIGID, 1 IN	LF	0	7.2	0
0	682-6120	CONDUIT, RIGID, 2 IN	LF	0	8.1	0
300	682-6233	CONDUIT, NONMETAL, TP 3, 2 in	LF	300	4	1200
0	682-7043	MULTI-CELL CONDUIT SYS, 4-WAY, FIBERGLASS	LF	0	23	0
		Section 927 - WIRELESS COMMUNICATION				
0	927-0010	SHELF MOUNT SPREAD SPECTRUM WIRELESS TRANSCEIVER UNIT, w/FSK & RS 232 CONNECTION	EA	0	3500	0
0	927-0100	SHELF MOUNT SPREAD SPECTRUM WIRELESS TRANSCEIVER UNIT w/RS 232 CONNECTION	EA	0	3500	0
1	927-0200	RACK MOUNT SPREAD SPECTRUM WIRELESS TRANSCEIVER w/FSK & RS 232 CONNECTION	EA	1	3500	3500
0	927-0300	2070 MOUNT SPREAD SPECTRUM WIRELESS TRANSCEIVER w/RS 232 CONNECTION	EA	0	3500	0
0	927-0400	SELF CONTAINED SPREAD SPECTRUM WIRELESS RADIO REPEATER STATION	EA	0	4000	0
1	927-0500	DIRECTIONAL RADIO ANTENNA AND CONNECTING CABLE	EA	1	2000	2000
0	927-0600	OMNI DIRECTIONAL RADIO ANTENNA AND CONNECTING CABLE	EA	0	3000	0
0	927-0700	ANTENNA POWER DIVIDER	EA	0	1000	0
1	927-0800	SPREAD SPECTRUM WIRELESS RADIO SURVEY	EA	1	6000	6000
0	927-0900	SPREAD SPECTRUM WIRELESS TRAINING	LUMP	LUMP	4500	0
		NETWORK SYSTEM ***				
0	935-1113	OUTSIDE PLANT FIBER OPTIC CABLE, LOOSE TUBE, SINGLE MODE, 24 FIBER	LF	0	5	0
0	935-1511	OUTSIDE PLANT FIBER OPTIC CABLE, DROP, SINGLE MODE, 6 FIBER	LF	0	2	0
0	935-3103	FIBER OPTIC CLOSURE, UNDERGROUND, 24 FIBER	EA	0	800	0
0	935-3203	FIBER OPTIC CLOSURE, AERIAL (SEALED), 24 FIBER	EA	0	560	0
0	935-3401	FIBER OPTIC CLOSURE, FDC (RACK MOUNTED), 6 FIBER	EA	0	270	0
0	935-3403	FIBER OPTIC CLOSURE, FDC (RACK MOUNTED), 24 FIBER	EA	0	1515	0
0	935-3501	FIBER OPTIC CLOSURE, FDC (WALL MOUNTED), 6 FIBER	EA	0	615	0
0	935-3503	FIBER OPTIC CLOSURE, FDC (WALL MOUNTED), 24 FIBER	EA	0	3000	0
0	935-4010	FIBER OPTIC SPLICE, FUSION	EA	0	42	0
0	935-5050	FIBER OPTIC PATCH CORD, SM	EA	0	65	0
0	935-5060	FIBER OPTIC SNOWSHOE	EA	0	120	0
0	935-6562	EXTERNAL TRANSCEIVER, DROP AND REPEAT, 1310 SINGLE MODE, (SIGNAL JOBS)	EA	0	1450	0
0	935-6572	EXTERNAL STAR TRANSCEIVER, 1310 SINGLE MODE, (SIGNAL JOBS)	EA	0	2440	0
0	935-8000	TESTING	LUMP	LUMP	2710	0
		VIDEO DETECTION ***				
0	938-1100	INTERSECTION VIDEO DETECTION SYSTEM ASSEMBLY, TYPE A	EA	0	5020	0
0	938-1200	PROGRAMMING MONITOR, TYPE A	EA	0	190	0
0	938-1210	OUTPUT EXPANSION MODULE, TYPE A	EA	0	230	0
0	938-8000	TESTING	LUMP	LUMP	2960	0
0	938-8500	TRAINING	LUMP	LUMP	2550	0

TOTAL: **$ 111,798**

STATE	PROJECT NUMBER	SHEET NUMBER	TOTAL SHEETS
GA.	CSSTP-0008-00(489)		

CDOT DEFAULT 332 CABINET PIN OUTS

UPPER INPUT FILE

	Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Type	2 Ch Det	2 Ch Det				2 Ch Det				TBA	TBA	DC	DC	DC
Channel 1	CI Pin	56	39	63	47	58	41	65	49	60		40	67	68	81
	Function	ø5	ø2 A				ø1					ADVANCE	ø2 Ped	ø6 Ped	Flash
	Field Term	I82 1,2	I82 5,6	I82 9,10	I84 1,2	I84 5,6	I84 9,10	I86 1,2	I86 5,6	I86 9,10			I80 4,6	I86 7,9	N/C
NCTRA/Sepac	Selector	1	1	5	7	9	11	13	15	17			Ped 2	Ped 6	
NCTRA/Sepac	Assigned	5	2	2	2	7	4	4	4	5			ø 2	ø 6	
Channel 2	CI Pin	56	43	76	47	54	45	79	49	62		53	69	70	82
	Function		ø2 B									ENABLE	ø4 Ped	ø8 Ped	Stop time
	Field Term	I82 3,4	I82 7,8	I82 11,12	I84 3,4	I84 7,8	I84 11,12	I86 3,4	I86 7,8	I86 11,12			I80 5,6	I80 9,10	N/C
NCTRA/Sepac	Selector	1	4	6	7	9	12	14	15	18			Ped 4	Ped 8	
NCTRA/Sepac	Assigned	5	2	2	2	7	4	4	4	7			ø 4	ø 8	

LOWER INPUT FILE

	Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Type		2 Ch Det								TBA	TBA	DC	DC	DC
Channel 1	CI Pin	55	40	64	48	57	42	66	50	59		54	71	72	51
	Function		ø6 A										EVA	EVB	RR1
	Field Term	I83 1,2	I83 5,6	I83 9,10	I85 1,2	I85 5,6	I85 9,10	I87 1,2	I87 5,6	I87 9,10			I89 4,6	I89 7,9	I89 10,12
NCTRA/Sepac	Selector	19	21	23	25	27	31	33	35	37		SPARE 2	PRE 3	PRE 4	PRE 1
NCTRA/Sepac	Assigned	1	6	6	6	3	8	8	8	1					
Channel 2	CI Pin	55	44	77	48	57	46	79	50	61		75	73	74	52
	Function		ø6 B									SPARE 3	EVC	EVD	RR2
	Field Term	I83 3,4	I83 7,8	I83 11,12	I85 3,4	I85 7,8	I85 11,12	I87 3,4	I87 7,8	I87 11,12			I89 5,6	I89 8,9	I89 11,12
NCTRA/Sepac	Detector	19	22	24	25	29	32	34	35	38			PRE 5	PRE 6	PRE 2
NCTRA/Sepac	Assigned	1	6	6	6	3	8	8	8	3					

SIGNAL QUANTITIES - 2070

ITEM	UNIT	QUAN
CONTROLLER/CABINET ASSEMBLIES		
A. CONTROLLER UNIT, MODEL 2070L	EA	01
D. CABINET ASSEMBLEY, MODEL 332	EA	01
E. SWITCH PACK	EA	07
F. DC ISOLATOR	EA	03
G. LOOP DETECTOR, 2-CHANNEL	EA	04
J. CONFLICT MONITOR W/EXTENDED FEATURES 2010	EA	01
PC 642-200 (OR EQUIVALENT) SURGE PROTECTOR	EA	01
LOOP/PED LEAD-IN WIRE (SHIELDED, TWISTED) 1000 FT		
A. 3-PAIR, 18 AWG	REEL	03
SIGNAL CABLE		
B. 7 CONDUCTOR PER 1000 FT	REEL	02
LOOP DETECTOR WIRE (14 AWG, STRANDED/1000 FT)	REEL	02
ONE-WAY,3-SECTION,12" PIXILATED VIEW LED SIGNAL HEADS PLASTIC	EA	08
18" PEDESTRIAN TYPE ; LED HEAD, COUNTDOWN	EA	06
PEDESTRIAN PUSH BUTTON AND SIGN	EA	07
BACK PLATE FOR ONE-WAY 3-SECTION, 12" SIGNAL HEAD	EA	08
HARDWARE FOR SPAN WIRE ERECTION	EA	08
HARDWARE FOR PEDESTAL ERECTION FOR 18" PEDESTRIAN SIGNAL HEAD, ONE-WAY MOUNTING	EA	02
HARDWARE FOR PEDESTAL ERECTION FOR 18" PEDESTRIAN SIGNAL HEAD, TWO-WAY MOUNTING	EA	02
PULL BOX, TP 1	EA	15
PULL BOX, TP 3	EA	04
PEDESTAL POLE 10'	EA	04
LOOP SAW CUT	EA	550
CONDUIT 1" GALVANIZED RIGID STEEL	LF	20
CONDUIT 1" PVC	LF	100
CONDUIT 2" PVC	LF	800
NO PED CROSSING R9-3A W/POST	EA	02
USE CROSS WALK R9-3BL	EA	01
USE CROSS WALK R9-3BR	EA	01
R560-5 STATE LAW- STOP FOR PEDESTRIANS IN CROSSWALK	EA	01
PED PUSH BUTTON PEDESTAL INCL FOOTING	EA	01
NO RIGHT TURN, R3-1	EA	01
NO LEFT TURN, R3-2	EA	01
MISC. MATERIALS TO COMPLETE INSTALLATION	LUMP	01

PAY ITEMS

ITEM	UNIT	QUAN
639-5000 CONCRETE STRAIN POLE, TP IV	EA	04
682-6233 CONDUIT, NONMETAL, TP3, 2 IN	LF	300
615-1200 DIRECTIONAL BORE 3"	LF	245
927-0200 RACK MOUNT SPREAD SPECTRUM WIRELESS TRANSCEIVER	EA	01
927-0500 DIRECTIONAL RADIO ANTTENNA AND CONNECTING CABLE	EA	01
927-0800 SPREAD SPECTRUM WIRELESS SURVEY	EA	01

20 FT 0 20 40 60 FT
SCALE: 1" = 20'

GEORGIA
DEPARTMENT OF TRANSPORTATION

DATE | REVISIONS

TRAFFIC SIGNAL INSTALLATION
SR 26 @ I-95 SB RAMP
CITY OF POOLER,
CHATHAM COUNTY

\0008489\G02.dgn 4/14/2010 11:28:06 AM gwesdin

6. Updated 2010 - Cost Estimates (CES, Fuel/Asphalt Price Adjustment, Utility)

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE PROJECT No. CSSSTP-0008-00(489), CHATHAM
SR26/ US80 @ SR405/ I-95 SB RAMP
P.I. No. 0008489

OFFICE D5RD

DATE 6/16/2010

FROM Glenn Durrence, P.E., District Engineer

TO Ronald E. Wishon, Project Review Engineer

SUBJECT REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER Dennis Odom, District Design Engineer

MNGT LET DATE Select Date

MNGT R/W DATE Select Date

PROGRAMMED COST (TPro W/OUT INFLATION)		**LAST ESTIMATE UPDATE**
CONSTRUCTION	$235,000	DATE 7/31/2008
RIGHT OF WAY	$Enter ROW Cost	DATE 1/24/2007
UTILITIES	$Enter Utility Cost	DATE Select Date

REVISED COST ESTIMATES

CONSTRUCTION*	$180,693
RIGHT OF WAY	$N/A
UTILITIES	$8,000

* Costs contain 5% Engineering and Inspection and Fuel and Liquid AC Adjustments.

REASON FOR COST INCREASE Inflation

Revised: April 1, 2010

CONTINGENCY SUMMARY

Construction Cost Estimate:	$154,005	(Base Estimate)
Engineering and Inspection:	$7,700	(Base Estimate x 5 %)
Construction Contingency:	$0	(Base Estimate x 6 %) (The Construction Contingency is based on the Project Improvement Type in TPro.)
Total Fuel Adjustment	$ 5,197	(From attached worksheet)
Total Liquid AC Adjustment	$ 13,791	(From attached worksheet)
Construction Total:	$180,693	
Utility Cost Estimate:	$8,000	
Utility Contingency:	$0	(Base Estimate x 5%)
Utility Total:	$8,000	

REIMBURSABLE UTILITY COST

Utility Owner	Reimbursable Costs

Attachments

c: Genetha Rice - Singleton, State Program Control Administrator

JOB ESTIMATE REPORT

JOB NUMBER : 0008489 SPEC YEAR: 01
DESCRIPTION: SR26/ US80 @ SR405/ I95 SB RAMP INTERSECTION IMPROVEMENT

COST GROUPS FOR JOB 0008489

COST GROUP	DESCRIPTION	QUANTITY	PRICE	AMOUNT	ACTIVE?
ASPH	ASPHALT (TN)	440.000	53.75000	23650.00	Y
SGNL	TRAFFIC SIGNALS (LS)	1.000	115852.35000	115852.35	N
TRFTPCTO	TRAFFIC CONTROL-TEMPORARY (PCT OF JOB)	260.549	5.84000	1521.60	Y
PVMKPCTO	PAVEMENT MARKING (PERCENT OF JOB)	260.549	3.39000	883.26	Y
CONC	CONCRETE (SY)				N
ACTIVE COST GROUP TOTAL				26054.86	
INFLATED COST GROUP TOTAL				26054.86	

ITEMS FOR JOB 0008489

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	647-1000		LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0008-00(489)	1.000	77032.00	77032.00
0010	639-5000		EA	PRESTRESSED CONC STR POLE, TP- CSSTP-0008-00(489)	4.000	5770.65	23082.62
0015	682-6233		LF	CONDUIT, NONMETL, TP 3, 2 IN	300.000	10.73	3220.14
0020	615-1200		LF	DIRECTIONAL BORE - CSSTP-0008-00(489)	245.000	21.70	5318.60
0025	927-0200		EA	RACK MNT SPRD SPEC WIRE. TRANS. W/ FSK &	1.000	2670.62	2670.62
0030	927-0500		EA	DIRECTIONAL RADIO ANT AND CONNECT CABLE	1.000	1084.97	1084.98
0035	927-0800		EA	SPREAD SPECTRUM WIRELESS RADIO SURVEY	1.000	3443.38	3443.39
0040	441-0748		SY	CONC MEDIAN, 6 IN	44.000	197.51	8690.62
0055	441-0104		SY	CONC SIDEWALK, 4 IN	28.000	121.68	3407.20
ITEM TOTAL						127950.17	
INFLATED ITEM TOTAL						127950.17	

TOTALS FOR JOB 0008489

ESTIMATED COST:	154005.03
CONTINGENCY PERCENT (0.0):	0.00
ESTIMATED TOTAL:	154005.03

Date 4/15/2010

P.I. Number 8489 County CHATHAM

Project Number CSSTP-0008-00(489)

Special Provision, Section 109-Measurement and Payment

FUEL PRICE ADJUSTMENT (*ENGLISH 125% MAX*)

ENTER FPL DIESEL	2.877
ENTER FPM DIESEL	6.473

ENTER FPL UNLEADED	2.716
ENTER FPM UNLEADED	6.111

http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

INCREASE ADJUSTMENT
125.00%

INCREASE ADJUSTMENT
125.00%

ROADWAY ITEMS	QUANTITY	DIESEL FACTOR	GALLONS DIESEL	UNLEADED FACTOR	GALLONS UNLEADED	REMARKS
Excavations paid as specified by Sections 205 (CUBIC YARD)		0.29		0.15		
Excavations paid as specified by Sections 206 (CUBIC YARD)		0.29		0.15		
GAB paid as specified by the ton under Section 310 (TON)		0.29		0.24		
Hot Mix Asphalt paid as specified by the ton under Sections 400 (TON)		2.90		0.71		
Hot Mix Asphalt paid as specified by the ton under Sections 402 (TON)	440.000	2.90	1276.00	0.71	312.40	
PCC Pavement paid as specified by the square yard under Section 430 (SY)		0.25		0.20		

BRIDGE ITEMS	Quantity	Unit Price	QF/1000	Diesel Factor	Gallons Diesel	Unleaded Factor	Gallons Unleaded	REMARKS
Bridge Excavation (CY) Section 211				8.00		1.50		
Class __Concrete (CY) Section 500				8.00		1.50		
Class __Concrete (CY) Section 500				8.00		1.50		
Class __Concrete (CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Superstru Con Class__(CY) Section 500				8.00		1.50		
Concrete Handrail (LF) Section 500				8.00		1.50		
Concrete Barrier (LF) Section 500				8.00		1.50		

BRIDGE ITEMS	Quantity	Unit Price	QF/1000	Diesel Factor	Gallons Diesel	Unleaded Factor	Gallons Unleaded	REMARKS
Stru Steel Plan Quantity (LB) Section 501				8.00		1.50		
Stru Steel Plan Quantity (LB) Section 501				8.00		1.50		
PSC Beams_____ (LF) Section 507				8.00		1.50		
PSC Beams_____ (LF) Section 507				8.00		1.50		
PSC Beams_____ (LF) Section 507				8.00		1.50		
Stru Reinf Plan Quantity(LB) Section 511				8.00		1.50		
Stru Reinf Plan Quantity(LB) Section 511				8.00		1.50		
Bar Reinf Steel (LB) Section 511				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Piling___inch (LF) Section 520				8.00		1.50		
Drilled Caisson,___ (LF) Section 524				8.00		1.50		
Drilled Caisson,___ (LF) Section 524				8.00		1.50		
Drilled Caisson,___ (LF) Section 524				8.00		1.50		
Pile Encasement,___(LF) Section 547				8.00		1.50		
Pile Encasement,___(LF) Section 547				8.00		1.50		

SUM QF DIESEL=	1276.00	SUM QF UNLEADED=	312.40

DIESEL PRICE ADJUSTMENT($)	$4,221.71
UNLEADED PRICE ADJUSTMENT($)	$975.75

ASPHALT CEMENT PRICE ADJUSTMENT
(BITUMINOUS TACK COAT 125% MAX)

APPLICABLE TO CONTRACTS/PROJECTS CONTAINING THE 413 SPECIFICATION. SECTION 413.5.01 ADJUSTMENTS ASPHALT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT

http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

ENTER APL	504	ENTER APM	1134

125.00%	INCREASE ADJUSTMENT

L.I.N.	TYPE	TACK (GALLONS)	TACK (TONS)	REMARKS
413-1000		187	0.8032	

TMT = 0.8032

PRICE ADJUSTMENT($)	$485.77

400 / 402 ASPHALT CEMENT PRICE ADJUSTMENT 125% MAX

ENTER APL	504	ENTER APM	1134

http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

125.00%	INCREASE ADJUSTMENT

L.I.N. / Spec Number	MIX TYPE	HMA	JMF AC%	AC	REMARKS
	9.5 mm SP	440	5.00	22.00	
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			5.00		
			TMT =	22.00	

PRICE ADJUSTMENT($)	$13,305.60

ASPHALT CEMENT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT(Surface Treatment 125% MAX)

APPLICABLE TO CONTRACTS CONTAINING THE 413 SPEC. SECTION 413.5.01 ADJUSTMENTS ASPHALT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT

http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

ENTER APL: 504 ENTER APM: 1134

125.00%	INCREASE ADJUSTMENT

Use this side for Asphalt Emulsion Only		
L.I.N.	TYPE	ASPHALT EMULSION (GALLONS)

TMT =

REMARKS:

Use this side for Asphalt Cement Only		
L.I.N.	TYPE	TACK (GALLONS)

TMT =

REMARKS:

MONTHLY PRICE ADJUSTMENT($)	

ADJUSTMENT SUMMARY

FUEL PRICE ADJUSTMENT (*ENGLISH 125% MAX)*

DIESEL PRICE ADJUSTMENT($)	$4,221.71
UNLEADED PRICE ADJUSTMENT($)	$975.75
ASPHALT CEMENT PRICE ADJUSTMENT (BITUMINOUS TACK COAT 125% MAX)	$485.77
400 / 402 ASPHALT CEMENT PRICE ADJUSTMENT 125% MAX	$13,305.60
ASPHALT CEMENT PRICE ADJUSTMENT FOR BITUMINOUS TACK COAT(Surface Treatment 125% MAX)	

REMARKS:

TOTAL ADJUSTMENTS	$18,988.83

DWM 10/08

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE CSSTP-0008-00(489)
P.I. # 0008489

OFFICE Jesup

DATE 06/16/2010

FROM Karon Ivery
District Utilities Engineer

TO Dennis Odom, District Design Engineer
ATTN Malik Al-Kush, Transportation Engineer Associate

SUBJECT PRELIMINARY UTILITY COST (ESTIMATE)

As requested by your office, we are furnishing you with a Preliminary Utility Cost estimate for each utility with facilities potentially located within the project limits.

FACILITY OWNER	NON-REIMBURSABLE	REIMBURSABLE
Atlanta Gas Light	$0	$0
ATT/Bellsouth	$ 0	$0
City of Savannah	$0	$0
Georgia Power-Dist.	$ 0	$ 8,000.00
Georgia Power-Trans.	$0	$0
Comcast	$0	$0
City of Pooler	$0	$0
Totals	$ 0	$ 8,000.00
Total Reimbursement Cost:		$ 8,000.00

CC; Angela Whitworth, Office of Financial Management
Lee Upkins, State Utilities Preconstruction Engineer
District Office File
Utilities Office File

7. Location and Design Notice (On Minor Projects)

NOTICE OF LOCATION AND DESIGN APPROVAL

Project No. CSSTP-0008-00(489)
P. I. NUMBER: 0008489

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of this project.

Date of Location Approval: July 23, 2010

The project consist of the installation of a new traffic signal at the I-95 Southbound Ramp and SR 26/US 80 in the city of Pooler located in Chatham County, Georgia described by the 8th Georgia Militia District (GMD 8). The new traffic signal will be interconnected with several adjacent traffic signals along the corridor to improve operational efficiency and safety.

Drawings or maps or plats of the proposed project, as approved, are on file and are available for public inspection at the Georgia Department of Transportation:

Troy Pittman
GDOT
trpittman@dot.ga.gov
630 West Boundary Street
Savannah, GA 31402
Phone: 912-651-2144

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

Bradford W. Saxon, P.E.
GDOT
bsaxon@dot.ga.gov
P.O. Box 610
Jesup, GA 31598
Phone: 912-427-5715

Any written request or communication in reference to this project or notice SHOULD include the Project and P. I. Numbers as noted at the top of this notice.

8. Project Concept Meeting Notes/Minutes - May 25, 2010
Atlanta GDOT Programs Office and FAA Coordination

MINUTES OF THE CONCEPT MEETING

Project No. CSSTP-0008-00(489) County: Chatham
P.I. NUMBER 0008489
DATE: May 25, 2010

The meeting began at 10:00A.M. at the Savannah Area Engineer's Office Conference Room, at which time the description of the project was read, and the main headings from the Project Concept Report were covered. During this time a sign in sheet was passed around for those in attendance to sign.

Those in attendance: See Sign-In Sheet Attached

Need & Purpose, description of project, Capacity

Brad Saxon, GDOT – Description of project should include which traffic signals will be interconnected. No problem with interconnecting with strain poles, parcels, possible minor widening on southbound ramp per recommended dual left turns onto SR 26 based on design year turning volumes; which will not require R/W, only restriping, traffic loop, etc. Quick Project and Time Savings implemented; meeting was not really necessary, however, meeting conducted so everyone would know of project and complete PDP guidelines.

Environmental Issues

Brad Saxon, GDOT - No apparent issues - GDOT Environmental Office - Jonathan Cox and Gale D'Avino to sign off on PCE

Right of Way – Parcels and relocations

No additional R/W needed – N/A

Hazardous waste sites or USTS - N/A

Maintenance Problems

No maintenance issues - N/A
Robert Byrd, City of Pooler - GDOT Standard Permit for traffic signal City of Pooler. Contact person Shannon King @ 912-748-6652.
Pete Liakakis, Chatham County – Inquired about the project time frame of improvements and scheduled work to help the reduce the accidents at this location.

Constructablitity

Standard construction and installation for traffic signal improvement – No issues

Utilities

No apparent issues; vertical clearances on transmission lines OK
Fiber Optics not a problem and will use radio for communications to save costs
Brad Saxon, GDOT - Traffic Operations not in attendance
Irvin Riley, AT & T - Sees no utility conflicts; will mark up utilities upon submittal
Paul Teague, AGL - 2-inch high pressure gas line on southeast side, however, no impact and terminates just before proposed traffic signal improvement.
Steven Thomas, GDOT – Located 6 companies/utilities. Do 1st and 2nd submittals at same time to facilitate time savings. Traffic signals plans should be developed and designed at preliminary stage to calculate point of utility attachment heights on strain poles etc.

Review Other Alternates – N/A

Meeting Sign-In Sheet

Title: CSSTP-0008-00(489), Chatham	Meeting Date: May 25, 2010
Location: Savannah Area Office 630 W. Boundary Street Savannah, GA 31402	Time: 10:00 a.m. Room: Savannah Area Engineer Conference Room

Georgia Department of Transportation

Name / Agency	Address	Phone	E-mail
Travis Dent / GDOT		912-427-5718	
Brad Saxon / GDOT		912-427-5715	
Pete Liakakis Chatham County	124 Bull St	912 652 7877	peteliakakis@chathamcounty.org
Troy Pittman / GDOT		912 651 2144	
Stephen Thomas		912-427-5779	
Cesar Laureano	702 Stiles Ave.	912-651-6537	
Paul Teague / AGL	1668 Chatham Pkwy	912-239-6526	pteague@aglresources.com
Irvin Riley / AT+T	6602 Abercorn St	912-356-1450	irvin.riley@att.com
Michael Adams / MPC/CORE MPO	110 East State Street	912-651-1458	adamsm@thempc.org
Tshaka Malik Al-Kush / DOT		912-530-4123	
Robert Byrd	City of Pooler	912 748 7261	rbyrd@pooler-ga.gov.
Jonnie Boyd	GDOT	912-370-2588	JBoyd@DOT.ga.gov

Meeting Sign-In Sheet

Title: CSSTP-0008-00(489), Chatham

Meeting Date: May 25, 2010

Location: Savannah Area Office
630 W. Boundary Street
Savannah, GA 31402

Georgia Department of Transportation

Time: 10:00 a.m.

Room: Savannah Area Engineer Conference Room

Name / Agency	Address	Phone	E-mail
MATT SAXON CITY of POOLER	1095 ROGERS ST POOLER 31322	748-4800	MSAXON @ POOLER-GA.GOV
Slade Cole / GDOT - Sav'h	630 West Boundary St. Sav'h	912-651-2144	georgeslade.cole @ dot.gdot.gov

Al-Kush, Malik

From: Evans, Charles
Sent: Thursday, June 17, 2010 9:36 AM
To: Al-Kush, Malik
Cc: Comer, Carol; 'nick.goodly@faa.gov'
Subject: FW: FAA Coordination
Attachments: 0008489_ConceptReport.pdf

Malik,

I have reviewed the concept report for the proposed Traffic Improvement Project at I-95 and US 80 in Chatham County. The project is located within 2 miles of the Savannah International Airport however based on this review and our conversation and since the project is basically a safety enhancement project consisting of improved markings and signalization of the intersection and does not involve additional poles and/or transmission lines or increased height of existing poles and/or transmission lines there should be no negative impact or conflict to the Airport.

During design if there should be a requirement for additional or increased height of poles/transmission lines please send us a copy of the plans for additional review.

I am forwarding this report to Atlanta GDOT Aviation Programs Office and FAA. If they have any additional comments you will be advised.

Give me a call if you have any questions of if I can be of assistance.

Charles Evans
Projects Manager
GDOT Aviation Programs
912-427-5789
912-294-5936

From: Al-Kush, Malik
Sent: Thursday, June 17, 2010 8:54 AM
To: Evans, Charles
Cc: Al-Kush, Malik
Subject: FAA Coordination

Project Number: CSSTP-0008-00(489)
P.I. No.: 0008489
US 80 @ I-95 Southbound Ramp Traffic Operational Improvement

Please review the attached Project Concept Report and at your earliest convenience please submit a letter per our compliance with FAA coordination. At the conceptual stage, there are no apparent utility impacts nor estimated increase in heights of poles with or without utility attachments. Communication interconnection will be by radio. Please see Minutes from May 25, 2010 Concept Team Meeting in Appendix (8). Thanks in advance.

Tshakamalik Al-Kush
Transportation Engineer Associate
912-530-4123 or 912-427-5763 fax
malkush@dot.ga.gov

Georgia Department of Transportation
District 5 - Preconstruction, Design Office
204 North Highway 301
Jesup, GA 31546

9. QC/QA Documentation

Georgia Department of Transportation
Quality Control and Quality Assurance Program

Revised: January 1, 2010

Component of Quality Assurance:

2. Concept Review

Review Panel: Assistant Office Head, DGM/Senior Design Engineer, Lead Design Engineer

Review Schedule: Hold meeting Four (4) weeks prior to distributing the original concept report. At a minimum, the Concept Layout and Draft Concept Report or Revised Concept Report will be evaluated for compliance and consistency with the following elements:

- ☒ Project addresses the Need & Purpose and is consistent with Logical Termini.
- ☒ **Revised Concept Report** – if the revision involves splitting an original project into additional project phases, the revised report must clearly note the new project limits for each phase along with the related cost estimates for each phase.
- ☒ Project conforms to RTP/TIP/STIP (model yr/open to traffic, # of lanes, termini, cost estimates).
- ☒ Traffic Volumes reflect current and design year estimates and cover side roads adequately.
- ☒ Geometric Design Policy has been adequately determined – functional classification, design speed, design vehicle, min radius, max grades, max SE rate, access control, clear zone, median usage. See GDOT DPM Chapters 3, 4, and 5: http://wwwb.dot.ga.gov/dpm/desmanual/toc.html.
- ☒ Typical Sections – see GDOT DPM Chapter 6: http://wwwb.dot.ga.gov/dpm/desmanual/ch06/ch06.html.
- ☒ Capacity Analysis demonstrates acceptable Level of Service (LOS) for Functional Classification.
- ☒ Lane configuration (number of lanes, turn lanes) is consistent with the Capacity Analysis.
- ☒ Provisions for u-turns have been assessed at appropriate locations along the roadway.
- ☒ Accident/Crash History - the concept addresses critical locations along the project?
- ☒ Avoidance of environmental resources has been adequately considered.
- ☒ State Waters and Stream Buffers have been identified by the ecologist and noted on plans.
- ☒ FEMA Flood Plains, Biota Impaired Streams, Fish Passage has been assessed.
- ☒ Avoidance of major utilities has been adequately considered.
- ☒ Considerations for pedestrian and bicycle access has been adequately addressed.
- ☒ Constructability has been assessed (staging, detours, road closures, access, major utilities, etc.).
- ☒ Structural elements have been adequately considered (bridge, culvert, retaining wall, noise wall).
- ☒ Vertical clearances are addressed (see GDOT Bridge and Structures Design Policy Manual). http://www.dot.state.ga.us/doingbusiness/PoliciesManuals/roads/Documents/DesignPolicies/GDOT%20Bridge%20and%20Structures%20Policy%20Manual.pdf.
- ☒ FAA coordination has occurred (if project is within 2 miles of an airport or aviation facility).
- ☒ Design Exceptions and Variances are addressed: http://wwwb.dot.ga.gov/dpm/desmanual/ch02/ch02.2.html.
- ☒ Coordination with stakeholders has occurred (FHWA, local governments, civic groups, utility companies, railroad companies, other federal and state agencies, etc...).
- ☒ R/W & Esmt limits are reasonable - GDOT DPM. http://wwwb.dot.ga.gov/dpm/desmanual/ch06/ch06.10.html.
- ☒ V.E. study recommendations have been implemented if applicable.
- ☒ Feasible alternative alignments have been adequately considered and noted.
- ☒ **Cost estimates have been reviewed and are satisfactory (ROW, UTL, and CST).**

Action:

- Lead Design Engineer will incorporate revisions resulting from the review into the Concept Report and Layout; and/or conduct additional studies to support decisions or resolve questions, and follow-up with Assistant Office Head for closure.
- Document and file, in QC/QA folder, a copy of the review notes and any actions taken by the review panel.

Project: # CSSTP-0008-00(489) . AOH: A. Dent . Date: 6-7-10